

Nebraska Dry Bean Commission

Annual Report

July 1, 2012-June 30, 2013

TABLE OF CONTENTS

COMMISSION MEMBERS.....	3
FISCAL YEAR FINANCIAL REPORT.....	4
RESEARCH ACTIVITIES.....	5
PROMOTIONAL ACTIVITIES.....	6
NEBRASKA DRY BEAN PRODUCTION.....	9
CONTRACTS.....	10-92

**NEBRASKA DRY BEAN COMMISSION MEMBERS
AS OF JULY, 2012**

PROCESSORS REPRESENTATIVES

Nolan Berry New Alliance Bean	P.O. Box 462 Gering, NE 69341 (308)436-5849	Term – Second May 30, 2011 May 20, 2014
Courtney Schuler Stateline Bean Producers Coop (completing Don Orr’s term)	801 Railroad Gering, NE 69341 (308)436-2186	Term – First December, 2011 May 30, 2013
Brian Kaman Kelley Bean Company	1520 Ave B Scottsbluff, NE 69361 (308)635-2338	Term – First June 16, 2012 May 30, 2015

GROWERS REPRESENTATIVES

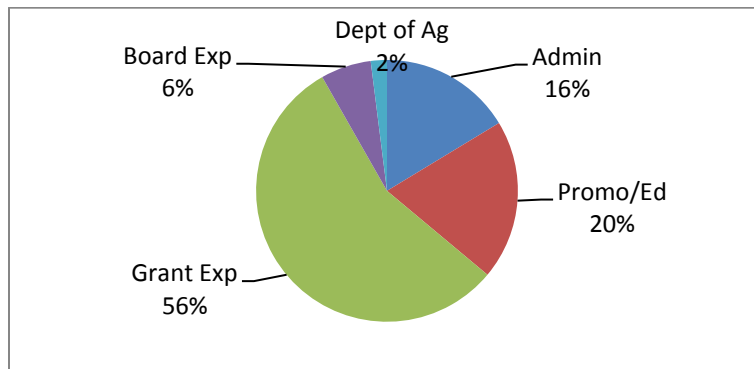
Steven Benzel District I	6180 Otoe Road Alliance, NE 69301 (308)762-8852	Term – Second May 30, 2011 May 30, 2014
Wes Ullrich District II	60287 Sunflower Road Mitchell, NE 69357 (308)641-2772	Term – Second May 30, 2012 May 30, 2015
Craig Henkel District III	7326 Road 110 Bayard, NE 69334 (308)631-5221	Term – Second May 30, 2012 May 30, 2015
Cindi Allen District IV (completing term)	450 Road East 60 Ogallala, NE 69153 (308)284-4980	Term – First August 8, 2011 May 30, 2013
Rodney Loose At-Large Dist I & II	170478 County Road C Mitchell, NE 69357 (308)623-2002	Term – First May 30, 2011 May 30, 2014

Ex Officio – Linda Boeckner, Director
Panhandle Research & Extension Center
4502 Ave I
Scottsbluff, NE 69361
(308)632-1254
E-mail:lboeckne@unlnotes.unl.edu

Lynn Reuter, Office
4502 Ave I, Scottsbluff, NE 69361
(308)632-1285
E-mail: dryediblebeans@nebraska.gov

**NEBRASKA DRY BEAN COMMISSION
FISCAL REPORT
July 1, 2012-June 30, 2013**

	FY 12-13 Budget	Total Expenses
Beginning Cash Balance	\$138,080.80	\$138,080.80
REVENUE		
Dry Bean Check-off fees	\$251,000.00	\$267,235.80
Investment Interest	\$ 4,500.00	\$ 2,868.02
Reimbursements	<u>\$ 0.00</u>	<u>\$ 862.50</u>
Total Revenue	\$255,500.00	\$270,966.32
REFUND PROGRAM		
Grower Refund Expense	\$ 9,000.00	\$ 7,178.76
Processor Refund Expense	<u>\$ 1,000.00</u>	<u>\$ 124.79</u>
Total Refund Expense	\$ 10,000.00	\$ 7,303.55
TOTAL AVAILABLE CASH	\$383,580.80	\$401,743.57
EXPENDITURES		
Administration	\$ 53,290.00	\$ 48,684.35
Promotion/Education	\$100,000.00	\$ 58,860.54
Grant Expense	\$166,586.67	\$166,013.86
Board Expense	\$ 24,500.00	\$ 18,613.28
Dept of Ag Contract	<u>\$ 8,036.00</u>	<u>\$ 5,945.64</u>
Total Expenditures	\$352,412.67	\$298,117.67
ENDING CASH BALANCE	\$ 31,168.13	\$103,625.90



**NEBRASKA DRY BEAN COMMISSION
FY 2012-13 APPROVED RESEARCH CONTRACTS**

DB2012-01	Increasing the production, efficiency and market value of dry edible beans through a collaborative, integrated research and extension program at the Panhandle Research and Extension Center (Boeckner)	\$25,000.00
DB2012-02	Influence of different levels of corn residue on per-emergence and post-emergence herbicide performance in dry beans (Wilson)	\$ 7,000.00
DB2012-03	Breeding great northern, pinto, small red, black, large red kidney and cranberry beans for multiple disease resistance with high performance In western Nebraska. (Urrea)	\$58,700.00
DB2012-04	Evaluation of dry bean cultivars for performance in Western Nebraska (Schild, Urrea)	\$ 9,500.00
DB2012-05	Effects of residue cover, tillage and cropping system/rotation length On insect and disease pressure in dry beans (Hergert, Harveson, Bradshaw).	\$12,000.00
DB2012-06	Monitoring bean pathogen variation and screening breeding lines With relevant pathogen races/isolates for multiple disease resistance (Steadman, Urrea, Schild, Harveson)	\$ 8,060.00
DB2012-07	Optimum plant population of dry beans as influenced by plant Architecture (Schild, Yonts)	\$ 4,000.00
DB2012-08	Identifying sources and mapping genes for bacterial wilt resistance And mapping resistance genes (Urrea)	\$ 6,000.00
	Planter agreement	\$ 4,826.67
DB2012-09	Incorporating dry-edible beans flour into noodles (phase II) Dr. Wajira Ratnayke	\$ 15,000.00
	Total Research Contracts	\$150 ,089.67



**Nebraska Dry Bean Commission
FY 12-13 Promotions Activities**



Overview of FY 12-13 International Promotions Program

The mission of the NDBC is to increase the consumption of dry beans on a domestic and international basis through research, education and promotion programs.

China Trade Mission and Sino-US Dry Bean Seminar

The Nebraska Department of Agriculture (NDA), along with the Nebraska Dry Bean Commission (NDBC) joined the FAS Beijing Agricultural Trade Office to continue a program to promote the use of Nebraska dry beans within China. NDA and NDBC funded research at the University of Nebraska-Lincoln to show how dry beans can be used in various ways.

Through the Foreign Ag Service Emerging Market Program, the FAS Beijing ATO brought a Chinese delegation of food manufacturers to Nebraska in late June 2012, to see first-hand how to take advantage of the low-cost, high-protein supply of Nebraska dry beans. The delegation participated in a seminar to learn about Nebraska's dry bean industry, the University of Nebraska Panhandle Research and Extension Center's dry bean breeding program and toured the Stateline Bean Producers facility in Gering, NE.

While in Lincoln, the group toured the University of Nebraska Food Processing Center and participated in a demonstration where different percentages of dry bean powder were added to Chinese style noodles.

In August 2012, representative of the Nebraska dry bean industry participated in a one-day food ingredient seminar in Beijing, China. Attending this seminar were Cindi Allen, dry bean grower and Lynn Reuter, NDBC Executive Secretary along with Dr. Wajira Ratnayake and Dr. Devin Rose, UNL Food Processing Center, and Dr. Elizabeth Arndt, ConAgra Foods. The 2012 Sino-US Food Ingredient seminar was attended by over 150 participants from China's food manufacturing companies and graduate and undergraduate food science students. While in Beijing, China the group had meetings with several Chinese noodle manufacturing companies who were interested in learning about Nebraska's dry bean industry and how the Chinese might utilize Nebraska grown dry beans in their noodle manufacturing industry.

2012 was the second dry bean seminar in Beijing, China and the third trade mission the NDBC participated in since 2010.

Promotion and consumer education have been the focus of this international project.

French Reverse Trade Mission

The NDBC, in conjunction with the US Dry Bean Council, sponsored a French Reverse Trade Mission in September 2012. This reverse trade team was comprised of representatives from the leading dry bean canning and processing sectors of France.

While in Nebraska the participants had the opportunity to visit Scottsbluff area dry bean processing facilities, were able to see the quality of the 2012 crop and to visit dry bean producer's fields to witness dry bean harvest first-hand.

French buyers are typically interested in purchasing great northern beans produced in Western Nebraska because of their bright color and consistent quality.

The US Dry Bean Council, through the use of Foreign Market Access and Foreign Market Development funding received from the USDA's Foreign Market Access program, aid in funding the travel expense for reverse trade missions such as this.

The Nebraska Dry Bean Commission continued its membership in the US Dry Bean Council in FY 2012-2013.

Nebraska Dry Bean Commission sets sights on trade expansion in Turkey.

Cindi Allen of Ogallala, Nebraska and District IV Nebraska Dry Bean Commission member did not hesitate to start packing when the call came to represent the Nebraska Dry Bean Commission (NDBC) in Turkey. Acting Deputy Secretary of Agriculture, Michael Scuse, lead a U.S. Trade Delegation to Istanbul, Turkey the early part of June 2013. The delegation represented more than 20 companies, six state departments of agriculture, and numerous agricultural organizations seeking to tap into Turkey's expanding market. "People around the world continue to demand U. S. food and agricultural products, boosting American businesses and supporting our rural communities," said Scuse. Allen noted, "Turkey has moved from a major producer to a major importer of dry beans. This gives both Nebraska dry bean growers and processors an incredible window for opportunity." Allen added, "Trade agreements are becoming enormous in their scope and reach. Turkey spans between Europe and Asia. As a result, Turkey is a very strategic center of commerce for U.S. agricultural trade and Nebraska dry beans.



A dynamic mix of government officials, private companies, and traders, all with agricultural interests, set the stage as an opportunistic event for NDBC participation. The Agricultural Trade Mission (ATM) to Turkey was brought to the attention of the Nebraska Dry Bean Commission through Nebraska's Department of Agriculture, Trade Representative Stan Garbacz, who attended the trade mission to represent Nebraska's diverse agricultural community.

The goals for this trade mission were to:

1. Obtain information about the potential for exporting dry beans into the Turkish market by meeting with buyers.
2. Share information about Nebraska Dry Bean Commission and NDBC members.
3. Encourage buyers to get quotes from Nebraska for the purpose of purchasing Nebraska-grown dry beans.
4. Promote the industry through photos depicting the nutritional quality, safety, and security of Nebraska dry beans.
5. Tell our story of technology in farming practices and continued research to assure our international buyers and customers a high-end, quality product.
6. Gain a better understanding of the Turkish culture for the purpose of building strong partnerships.

Nebraska is rated third in dry bean production within the United States. Because of this, it's vital to NDBC to continue to promote the consumption of dry beans at home and abroad. As the dry bean market expands it is also necessary to ensure the success of growers through research, increased production, and ongoing participation in emerging markets.

The Nebraska Dry Bean Commission looks for opportunities to increase the consumption of dry beans, educate the consumer about the health benefits of beans, and continue to fund research that aligns with the goals of the NDBC.

Domestic Promotion Program

Nebraska Agriculture and You

Telling consumer the story of Nebraska grown dry edible beans became a reality when the Nebraska Dry Bean Commission was invited to partner with the Nebraska Department of Agriculture's publication,

The Nebraska Department of Agriculture partnered with Journal Communications, Inc. to launch this innovative magazine featuring Nebraska's number one industry, Agriculture.

The goal of this publication is to educate consumers and influencers about the important role Nebraska's farmers, ranchers and agribusinesses play in their daily lives, in the state's economy and in the global market place.

Copies of the Nebraska Agriculture and You will be distributed to waiting rooms across Nebraska in hope consumers will take the opportunity to learn about Nebraska's diverse agriculture industry and take home several healthy tips.

FARM HARVEST FALL FESTIVAL/UNL EXPO

The Farm and Ranch Museum in Gering, NE was the stage for opportunities for families to learn about the Nebraska dry bean industry and the health benefits of incorporating dry edible beans into a healthy diet. During the two day event, the NDBC provided dry bean recipes and nutrition information and also sponsored dry bean brownies for the public to sample. The brownies were a big hit with the kids.

NEW PORK AND BEAN RECIPE CHALLENGE

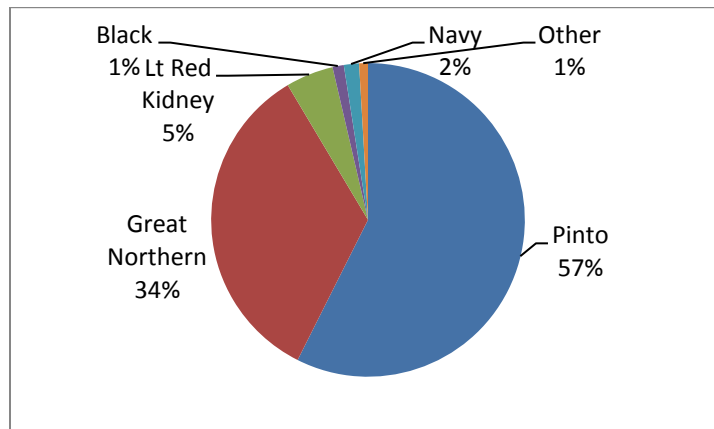
2012 was the third consecutive year the NDBC partnered with the Nebraska Pork Producers to sponsor the New Pork and Bean recipe challenge. The public response to the recipes challenge was exciting with over 150 entries. The winning recipe was Jerk-spiced Pork N Bean Burger with Island Mayo 'N Caribbean carrot slaw.

2012 NEBRASKA DRY BEAN PRODUCTION

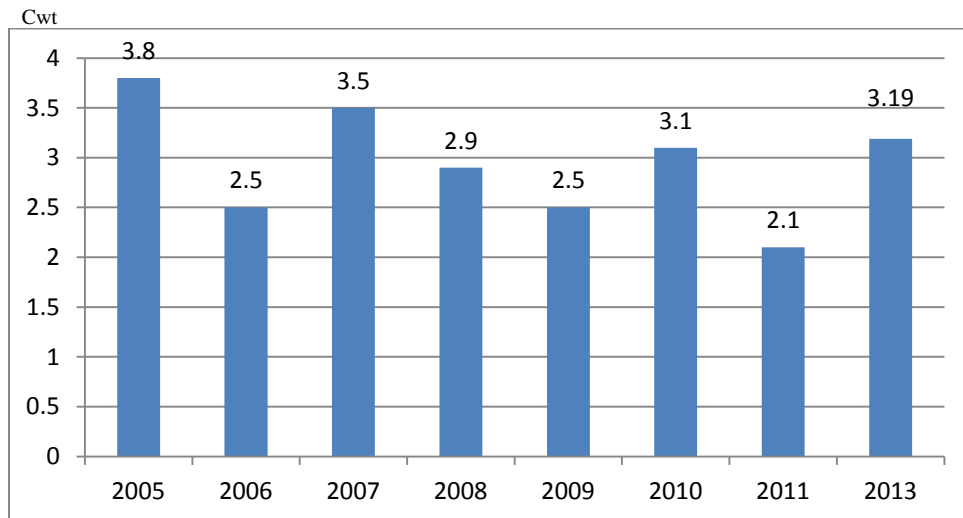
In 2012, Nebraska dry bean production increased 25% over 2011's production; however dry bean production was less than 2010 production. In 2012, Scotts Bluff county ranked seventh in the nation for all dry bean production of 2400 pounds per acre. Nebraska remained the leader in Great Northern production in the nation and third in total dry bean production.

	2010	2011	2012
Acres Planted	170,000	110,000	145,000
Acres Harvested	155,000	102,000	133,000
Yield Per Acre	2,060 pounds	2,020 pounds	2,400 pounds
Total Production	3,193,000 cwt	2,091,000 cwt	3,191,000 cwt
Value of Production	\$86,211,000.00	\$89,460,000.00	\$123,888,000.00

2012 Production by Varieties



2005-2012 Historical Dry Bean Production



AGREEMENT

between

DRY BEAN COMMISSION

and

NEBRASKA DEPARTMENT OF AGRICULTURE

#18-01-221

This Agreement is entered into this 1st day of July, 2013, by and between the Nebraska Department of Agriculture, hereinafter referred to as the "Department," and the Dry Bean Commission, hereinafter referred to as the "Commission," and shall continue in effect until June 30, 2014 unless sooner terminated or modified by mutual agreement of the parties hereto, in writing.

A. The parties wish to mutually acknowledge the following:

1. The Commission is responsible for the administration of the Dry Bean Resources Act (§2-3735 et seq.), the provisions of which are hereby declared to be a part of this Agreement.
2. The Department is responsible for the administration of the Nebraska Agricultural Products Marketing Act (§2-3801 et seq.), and the Management Services Expense Revolving Fund (§§81-201.03 and 81-201.04), the provisions of which are declared to be a part of this Agreement.
3. The Commission desires the Department to assist the Commission in administering the Dry Bean Commission Resources Act, and the Department is desirous of providing such assistance.
4. Each party specifically agrees that the funds expended pursuant to this Agreement shall be spent only on the work specified and for no other purposes, and that any amendments to the Agreement shall be in writing and executed by each party to be valid.

B. The Department agrees to assist the Commission by providing the following services on a cost reimbursement basis, but such services shall not exceed eight thousand four hundred and fifteen dollars and no cents (\$8,415.00) in value.

1. Fee Collection Services:
 - a. Distribution of fee forms
 - b. Processing and return of forms
 - c. Follow-up on delinquent accounts in accordance with enforcement procedures.
 - d. Up-date mailing lists.

- e. Maintain records in accordance with State record retention schedule.

2. Fiscal Services:

- a. Budgeting.
- b. Accounting.
- c. Fund investment.
- d. Purchasing.
- e. Revenue and expenditure document preparation/review.
- f. Expenditure review under state guidelines.
- g. Research project fiscal management.
- h. Maintain records in accordance with State record retention schedule.

3. Auditing Services:

- a. Review accounting procedures and reports.
- b. Field auditing of first purchasers accounts as authorized by Commission's actions.
- c. Internal auditing of expenses.
- d. Policy evaluation.

4. Miscellaneous Services:

- a. Statewide inventory.

5. To provide the above services, the Department shall employ the necessary personnel and incur the necessary operating and travel expenditures. Each month a State Budget Status report shall be provided to the Commission detailing the total budget, monthly expenditures, and fiscal year-to-date expenditures incurred, along with an Interagency Billing Transactions Document billing for the prior month's services performed.

If services in excess of \$8,415.00 are requested by the Commission, this Agreement shall be amended accordingly.

C. The Commission agrees under §2 3759 the Department is the independent agency contracted to keep first purchaser statements confidential and report only the totals of all statements for the preceding three months to the Commission. The Department agrees to perform the duties described in section B in the following manner:

- 1. First purchaser statements are defined to include the dry bean fee collection forms.
- 2. All grower and processor refund application requests including supporting documentation are confidential at the request of the Commission.

3. Furthermore, volume, dollar amount, grower name, and price information included on first purchaser statements and grower and processor refund forms are confidential and are not to be released to any Commission member, Commission staff, or any other person except in a case of a bona fide investigation upon which written approval will be obtained from the Commission before such statements shall be released to the Nebraska Attorney General's office.
 4. The Commission shall provide to the Department information necessary to update the roster of first purchasers. If the first purchaser identifies to the Department that a change is to be made to the roster, the Department shall so notify the Commission of the change. The Commission will then advise as to whether or not the change should be made.
 5. All delinquent accounts are to be reported to the Commission quarterly. Information reported shall include only the first purchaser's name and the period for which they are delinquent.
 6. For audits performed under this Agreement, the Department shall identify in a report of findings to the Commission the first purchaser audited, period covered by the audit, when the audit was performed, and their compliance or noncompliance of §§2-3755 through 2-3760. In the case of noncompliance, the Department will identify the area of noncompliance, but shall not disclose detailed information on volume, dollar amount, grower names, and price paid. If voluntary compliance is not obtained from the first purchaser at the time of the audit, the Commission may request in writing that all information obtained be provided to the Nebraska Attorney General's office for further action.
- U. The Commission agrees to the Department performing duties outlined in this Agreement in accordance with the five areas contained in section B.
- E. The Department and the Commission agree to.
1. Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, qualified disability or age; and
 2. Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or otherwise qualified disability status.
 3. Have in force during the agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:
 - a. A statement notifying employees that the unlawful manufacture, distribution, possession or use of a controlled substance is prohibited in the contractor's workplace;
 - b. The actions that will be taken against employees for violating the policy;
 - c. A requirement that each employee receive a copy of the policy.

- F. The Commission agrees to compensate the Department for the services provided hereunder, as follows:

Direct charges shall be made to the Dry Bean Commission, monthly, for services performed, but the total charges for the Agreement period shall not exceed \$8,415.00. A one-month advance payment shall be made by the Commission to the Department upon receipt of an Interagency Billing Transaction Document from the Department. Upon termination of the Department as the independent contractor, any unearned credit from the advanced payment will be refunded to the Commission.

- G. The Commission assumes all liability for the acts or omissions of such acts of the Commission members and its employees arising out of or relating to contents of this Agreement, and agrees to indemnify the Department for any claims or liability arising out of or relating to such acts or omissions. The obligation to indemnify shall survive the expiration or termination of this Agreement.
- H. This Agreement shall be for the period from July 1, 2013, to June 30, 2014, unless sooner terminated by a ninety (90) day advance written notice of either party.
- I. All provisions to this agreement are subject to the Americans with Disabilities Act.

DEPARTMENT OF AGRICULTURE

8/28/13
Date

Robbin Wickham
For Greg Ibach, Director

DRY BEAN COMMISSION

Date

Wesley Williams
Chairperson

DATE:

INTER-AGENCY AGREEMENT

This Agreement is made and entered into this 22 day of January, 2010 by THE PANHANDLE RESEARCH AND EXTENSION CENTER, University of Nebraska-Lincoln ("PHREC") and the NEBRASKA DRY BEAN COMMISSION ("NDBC") whose address is 4502 Ave I, Scottsbluff, NE 69361. PHREC and NDBC are both agencies of the State of Nebraska.

PHREC and NDBC hereby agree as follows:

1. PREMISES - PHREC hereby rents to NDBC, the below described premises (herein called "Premises") for use as professional office space: Elliott Building Room 107A approximately 192 net usable square feet.

2. TERM - The initial Term of this Agreement shall commence on July 1, 2009, and shall continue on a month to month basis until either party gives sixty (60) days written notice to the other party.

3. RENTAL - NDBC shall pay PHREC \$1100 per fiscal year July 1, 2009 - June 30, 2014. Any future rate increases will be communicated in writing at least sixty (60) days prior to effective date. Rental shall be billed by and paid to PHREC by internal charge document.

4. TERMINATION - PHREC and NDBC shall have the right to terminate this Agreement upon giving a sixty (60) day notice of such termination in writing.

5. NOTICES - All notices herein provided to be given, or which may be given, by either party to the other, shall be deemed to have been fully given when made in writing and deposited in the United States mail, postage prepaid, and addressed as follows:

PHREC at: Karen Schultz
Panhandle Research & Extension Center
4502 Avenue I
Scottsbluff NE 69361

With copy to: Linda Cowdin
UNL Property Management
1901 Y Street
Lincoln, NE 68588-0605

NDBC at: Lynn Reuter
Nebraska Dry Bean Commission
4502 Avenue I
Scottsbluff, NE 69361

With copy to: _____

6. **ASSIGNMENT AND SUBLETTING** - NDBC shall not assign this Agreement.
7. **INSPECTION** - NDBC agrees to permit PHREC and/or its authorized representative to enter the Premises at all reasonable times during usual business hours for the purpose of inspecting the same, or for the making of any necessary repairs for which PHREC is responsible or feels necessary for the safety and preservation of the Premises.
8. **SIGNAGE, FIXTURES AND PERSONAL PROPERTY** - All signage must be approved in advance by PHREC and follow University Sign Guidelines. Any trade fixtures, equipment, personal property or signage installed in or attached to the Premises by or at the expense of NDBC, shall be and remain the property of NDBC. PHREC agrees that NDBC shall have the right to remove any and all of its personal property, trade fixtures, equipment and signage. Equipment and other personal property which may have been stored or installed by or at the expense of PHREC shall be and remain the property of PHREC. NDBC agrees that it will, at its expense repair any damage occasioned to the Premises by reason of the removal of its trade fixtures, equipment, signage and other personal property.
9. **ALTERATIONS** - NDBC acknowledges that the Premises are rented in good condition. NDBC will not permit any alternations of or additions to any part of the Premises, except by written consent of PHREC, which consent shall not be unreasonably withheld, and all alterations and additions to the Premises shall remain for the benefit of PHREC unless otherwise provided in said consent. NDBC hereby indemnifies PHREC against liens, costs, damages and expenses with respect to any such additions or alterations.
10. **RETURN OF PREMISES** - At the conclusion or termination of this Agreement or any extension thereof, NDBC shall return the Premises to PHREC in the same condition as it was received at commencement of this Agreement, normal wear and tear accepted. If at the conclusion or termination of this Agreement or any extension thereof, PHREC is of the opinion that NDBC is not leaving the Premises in the same condition as it was received, normal wear and tear accepted, then such costs of restoration will be determined by a panel of three (3) persons consisting of NDBC, PHREC and one (1) person selected by mutual consent of both parties.
11. **DESTRUCTION OF PREMISES** - Should said Premises be made unfit for occupancy due to fire, unavoidable casualty, or Act of God, said tenancy shall immediately terminate and NDBC shall pay rent only to the time of such termination. The portion of any advance rental payment which is attributed to the period of time after the Agreement has been terminated in the above manner shall be refunded by PHREC to NDBC. If the damage is not of a permanent nature, PHREC shall be responsible for repairing the same in a timely manner at PHREC's own expense and the rental payments shall be suspended until said Premises have been put in proper condition for occupancy.
12. **REPAIR AND MAINTENANCE** - During the Agreement term, PHREC shall provide HVAC and electrical services, basic janitorial services, and maintain the general landscaping, sidewalks and parking areas; the roof, exterior walls, exterior doors, exterior windows and the corridors of the building; and the building equipment in good repair and tenantable condition. PHREC's obligations include, but are not limited to, the maintenance and repair of the plumbing, heating electrical, air-conditioning and ventilating equipment and fixtures to the end that all such facilities are kept in good operative condition except in case of damage arising from a willful or negligent act of NDBC's agent, invitee, or employee. NDBC's obligations include, but are not limited to, the maintenance and repair of all other equipment and fixtures in the Premises.

13. **SERVICES AND UTILITIES** - PHREC will provide heating, cooling, and lighting as well as a network connection in the office space occupied by NDBC. NDBC will arrange and pay for telephone service for the premises. It is the responsibility of PHREC to insure that adequate entrance cables are provided by the local telephone company for the services required.

14. **GENERAL PROVISIONS** - If the whole of the Premises or a substantial part of the Premises shall be required for PHREC's public use or purpose, the terms of this Agreement shall end upon and not before the date when possession of the part so taken shall be required for such use or purchase, and without apportionment of the award, and current rent shall be apportioned to the date of termination.

15. **COMPLIANCE WITH LAW** - NDBC shall comply with all building and use or occupancy restrictions, conditions and covenants of record. NDBC shall comply with the requirements of all policies of public liability, fire and other insurance at any time in force with respect to the Premises. This space shall meet all current code requirements, including but not limited to, fire/life safety codes and the Americans with Disabilities Act Accessibility Guidelines.

16. **DEFAULT** - If default shall be made in any of the covenants or agreements of NDBC contained in this document, or in case of any assignment or transfer of this Agreement by operation of law, PHREC may, at its option, terminate this Agreement by serving ten (10) days' notice in writing upon NDBC. Any waiver by PHREC of any default or defaults shall not constitute a waiver of the right to terminate this Agreement for any subsequent default or defaults, nor shall any such waiver in any way affect PHREC's ability to enforce any section of this Agreement. The remedy set forth in this section shall be in addition to, and not in limitation of, any other remedies that PHREC may have at law or in equity.

17. **INSURANCE** - NDBC agrees to insure its own personal property and maintain liability insurance and accordingly waives any and all claims against PHREC for loss or damage of any type unless such loss is the result of a negligent act or omission of PHREC, its agents or employees. PHREC agrees to insure the Premises for loss or damage unless such loss is the result of negligent act or omission of NDBC, its agents or employees.

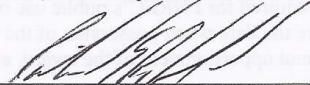
18. **TAXES** - The Premises are tax exempt. If the Premises become subject to real property tax by reason of this Agreement, NDBC shall be responsible to pay such tax.

19. **MODIFICATION OF AGREEMENT** - Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement shall be binding only if evidenced in a writing signed by each party or an authorized representative of each party.

[Remainder of page intentionally left blank; signature page to follow]

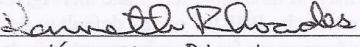
IN WITNESS WHEREOF, the parties have duly executed this Agreement as of the date first above written.

FOR THE
PANHANDLE RESEARCH AND EXTENSION
CENTER, University of Nebraska-Lincoln

By: 
Name: Richard E. Byfield
Its: Director, FPC

Date: 1-22-10

NEBRASKA DRY BEAN COMMISSION

By: 
Name: Kenneth Rhoades
Its: Chairman

Date: 1-11-2010

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-01

PROJECT TITLE: Increasing the Production, Efficiency and Market Value of dry edible beans through a collaborative, integrated research and extension program at the Panhandle Research and Extension Center.

PROJECT INVESTIGATORS:

1. Insect resistance for dry beans (Bradshaw, Urrea)
2. Evaluating Chemical Products for Bacterial Wilt control in Dry Beans (Harveson)
3. Fertilizer and Soil Management for Dry Bean Production (Hergert)
4. Exploring New Herbicide Programs for Weed Control in Dry Beans (Wilson)
5. Developing Season long deficit irrigation strategies for dry bean production (Yonts)

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-01, attached, and that the Commission agrees to pay the University the total sum not to exceed \$25,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-01 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$25,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$25,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

(1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;

(2) The specific actions that will be taken against employee for violating the policy; and

(3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

8.16.12

Date

NEBRASKA DRY BEAN COMMISSION

Nolan L Berry

Nolan Berry, Chairman

BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA

8.22.12

Date

Jeanne Wicks

Jeanne Wicks, Director
Sponsored Programs

#59554

- A. Nebraska Dry Bean Commission**
B. Increasing the Production Efficiency and Market Value of Dry Edible Beans Through a Collaborative, Integrated Program at the Panhandle Research and Extension Center
C. Project Year: July 1, 2012- June 30, 2013

D. Contact Person: Dr. Linda S. Boeckner, District Director
Panhandle Research and Extension Center
308-632-1254
Lboeckner1@unl.edu

Faculty Contributing to the Core Proposal: Jeffrey Bradshaw, Robert M. Harveson, Gary W. Hergert, Carlos Urrea, Robert G. Wilson, C. Dean Yonts

E. Project Description:
Potential Benefits to Nebraska's Dry Bean Industry

Dry bean producers, processors and marketers require new and timely information to optimize profitability. The University of Nebraska Panhandle Research and Extension Center is staffed with a cadre of specialists with expertise to address key production, processing and quality issues. A strong partnership between the Nebraska Dry Bean Commission and the University of Nebraska Panhandle Research and Extension Center will facilitate the development of new information and the timely exchange of that information with dry bean growers and processors.

For Nebraska dry bean growers and processors to maintain a competitive edge in the industry, an on-going, broad-based production research and extension effort must be sustained within the bean production region. Research continuity helps specialists anticipate problems and respond in a timely manner. Having this activity within the production region will assure relevant and timely information transfer between research and grower or processor. Methodology for each of the core components are described in the attached submissions by the researchers.

Specific Objectives and Procedures:

Core Projects (see attachments for specific project objectives, procedures and outcomes):

1. Insect Resistance for Dry Beans (Bradshaw, Urrea).
2. Evaluating Chemical Products for Bacterial Wilt Control In Dry Beans (Harveson).
3. Fertilizer and Soil Management for Dry Bean Production (Hergert).
4. Selecting for and Improving Chickpea Adaptation to Western Nebraska Urrea).
5. Exploring New Herbicide Programs For Weed Control In Dry Bean (Wilson).
6. Developing Season Long Deficit Irrigation Strategies For Dry Bean Production (Yonts).

F. Project Location:

The core projects will be conducted on the research plots at the Panhandle Research and Extension Center or within the Panhandle District.

G. Technology Transfer:

Project results are presented to bean growers and processors at the annual Bean Day hosted by Nebraska Dry Bean Growers Association in January, and annual summer field day in August. When appropriate, findings are presented in the Bean Bag, a publication of the Nebraska Dry Bean Growers Association that is supported with funds from the Nebraska Dry Bean Commission, and are posted on the dry edible bean page that is part of the statewide UNL Crop Watch website, as well as the UNL variety test web page (<http://varietytest.unl.edu>). Regular print and electronic media releases are additional avenues for reporting findings of dry edible bean research. Annual research updates are presented to the Nebraska Dry Bean Commission in November of each year and at professional society meetings, when appropriate.

H. Project Budget: (July 1, 2012 to June 30, 2013):

Budget total	\$30,000
Each Core Project will receive \$5,000.	25,000
Expendable Operating Supplies & Expenses	
Services & Labor	

Time line:

Preliminary report (NDBC research meeting)	November, 2012
Annual report	March 1, 2013

I. Potential Impact of Project Results:

The collective nature of these core proposals addresses different aspects of dry bean production that will improve the quality of dry beans, improve marketing potential, and enhance the production sustainability by improving input costs and times, or enhancing harvest potential. For specific statements of impact or expected outcomes on each of the core proposal see the accompanying attachments.

Nebraska Dry Bean Commission

Evaluating Chemical Products for Bacterial Wilt Control in Dry Beans

Project Year: July 1, 2012- June 30, 2013

Contact Person: Robert M. Harveson; PHREC/Plant Pathology; 308-632-1239;
rharveson2@unl.edu

Project Description:

- a. Justification and Background. Bacterial wilt, caused by the bacterium, *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* (Cff), was an endemic problem in dry bean production in western Nebraska during the 1960's and early 1970's, presumably through seedborne transmission and dissemination. The disease vanished in this area after seed sanitation and crop rotation practices were initiated. It re-appeared again in 2003, and since that time has been detected from more 400 fields throughout the Central High Plains. Because the pathogen has apparently become well established in Nebraska, we now need to address the problem in a manner as we would with any other traditional bacterial disease such as common blight.

Disease development and secondary spread throughout fields are similar for all the bacterial diseases (common and halo blights, brown spot, and wilt) found in dry beans. Important factors promoting infection and spread include: planting infected seed, planting beans in close proximity to infected fields from the previous year, or using reduced tillage methods of land preparation.

However, successful chemical control has resulted in inconsistent results for this group of bacterial diseases. Increased economic returns have been achieved after applications of copper-based chemical products for bacterial brown spot and halo blight in dry beans. Successful management of infection from common blight has been less successful and more variable among and between locations. Prior to the NDBC-funded study in 2011 the ability of copper to reduce disease problems from bacterial wilt was a complete unknown. Thus we proposed to investigate this concept in a research field with copper applications made with differing frequencies. We obtained results in 2011 that were statistically insignificant, but also observed trends pointing toward a potentially beneficial management technique.

- b. Methodology. The study will be conducted at the Panhandle REC. We want to additionally compare plant responses using a susceptible (Orion) cultivar with those of a resistant one (Emerson). Chemical applications using copper-based products (in addition to other products TBA) will be utilized at approximately 40 days after emergence (flowering) and then repeated every 7-10 days for a maximum of 2 applications per treatment. Standard yield (seed yield and size) and disease parameters (incidence and severity) will be employed to evaluate the performance of the chemical treatments.
- c. Objectives. The primary objective of this proposed study is to evaluate the efficacy of various commercially available chemical sprays in both resistant and susceptible cultivars for reducing losses and disease severity in dry beans due to bacterial wilt.

Core Budget: \$5000 for operating, supplies and personnel

Nebraska Dry Bean Commission

Insect Resistance for Dry Beans

Project Year: July 1, 2012- June 30, 2013

Contact Person: Jeff Bradshaw (in collaboration with Carlos Urrea); Panhandle Research and Extension Center; 308-632-1369; jbradshaw2@unl.edu

Project Description:

- a. **Justification and Background.** The western bean cutworm (WBC) and Mexican bean beetle (MBB) are two major pests of dry beans in western Nebraska. The WBC causes damage to the beans by feeding on the pods and developing beans while the MBB mostly feeds on leaves. Because dry bean yield and quality can be greatly impacted by damage from these insects, management of these insects is important to the production of high-yielding, quality beans. Dr. Urrea has collected a wide base of genetic material and it would be helpful to know how these two insects may respond to this material. The level of variability in WBC and MBB response to different bean lines will determine the future potential for developing improved varieties with resistance to WBC and MBB. To date we have established two Mexican bean beetle colonies, identified some advanced tools for resistance exploration in the future, and identified varieties and lines which vary in their ability to support MBB growth. Because WBC is not easily maintained in the laboratory, MBB resistance will be explored first. Our hope is that resistance against one chewing insect (MBB) may yield resistance against another (WBC).
- b. **Methodology.** Using a limited number of bean lines from Dr. Urrea's genetic material with broad genetic backgrounds, WBC and MBB will be screened for survival, development, and feeding. We will grow plants under controlled environments and they will be tested in the laboratory by removing leaves, based on our protocol developed in 2010. Screening for leaf-feeding resistance by these insects may preempt the need to identify resistance to pod feeding. Thus far our bioassays have indicated that we might be able to select some lines (MBB susceptible and resistance) for F1 crosses this winter. However, more assays are currently being run to inform these decisions.
- c. **Objectives.**
 - 1) Continue to evaluate select dry bean lines for resistance to western bean cutworm and Mexican bean beetle.
 - 2) Develop dry bean crosses containing resistance traits against Mexican bean beetles and possibly western bean cutworm
 - 3) Deploy field trials of dry bean lines with resistance to chewing insects

Core Budget: \$5000 for operating, supplies and personnel

Potential Impact of Project Results: We hope that over the next three years we can establish the extent of genetic variability in diverse bean genetic backgrounds to assess the potential that resistance to these insects can be improved. Emphasis is being placed on food safety and other environmental issues. The development of effective Integrated Pest Management practices and the availability of insect-resistant varieties against the WBC and MBB will enable growers to better manage these insects with fewer inputs and ultimately increase food safety, bean quality and profitability.

Potential Impact of Project Results: Losses in both yield and quality have been demonstrated. Some heavily infested fields in Nebraska during 2004 were estimated to yield up to two thirds less than would be expected of a typical crop. Historically, the disease was very common in this area 30 years ago, but the use of seed sanitation, increasing disease-free seed in dry climates, and using proper crop rotations effectively stopped the introduction of the pathogen while eventually eliminating it from fields where it had been present.

We have been consistently finding the pathogen in dry bean fields widely distributed across the state. A survey conducted in 2009 and 2010 determined that 27% and 21%, respectively, of the bacterial samples collected from Nebraska production fields were infected with the bacterial wilt pathogen. Therefore, we must now begin to address the problem as we would for any other established disease.

Genetic resistance will ultimately be the most cost effective method for management. However, with the exception of 'Emerson', no other varieties are available with adequate levels of resistance. We are currently working on developing new resistant varieties, but it will still be several years until we have something commercially available. Furthermore, there are few chemical options available for bacterial diseases in general. Copper based sprays are the exception and have been effective for some diseases in Nebraska, but not others. Therefore we want to evaluate the efficacy of various chemical products currently available to growers for reducing losses from this pathogen. If chemicals such as this are proven to effectively manage wilt, we could use this as a temporary stop-gap measure for management until new resistant varieties are available for use.

Nebraska Dry Bean Commission

Fertilizer and Soil Management for Dry Bean Production

Project Year: July 1, 2012- June 30, 2013

Contact Person: Gary W. Hergert; Panhandle Research and Extension Center;
308-632-1372; ghergert1@unl.edu

Project Description:

- a. **Justification.** As the acreage of dry bean production under reduced tillage has expanded, nutrient requirements other than N have received little attention, especially micronutrients. Zn requirements, fertilizer sources and application methods for dry beans are well established. Iron deficiency chlorosis (IDC) is known to be a problem for many cultivars on calcareous soils, however, most Fe treatments are fairly expensive. Recently, there has been renewed interest in looking at FeEDDHA (ortho-ortho formulation) for IDC correction in soybean and sugar beet within the seed-furrow. Literature searches show no recent activity for dry bean, so this is novel research. Preliminary research at PHREC in 2011 showed a potential for economical yield increases with low rates of seed-furrow applied FeEDDHA. Expanded rate experiments are required to determine economical application rates. IDC of dry beans was researched at UNL and PHREC in the 1980's by Coyne and Clark. Major differences were shown between cultivars, but no methods or rating systems have been developed for newly released cultivars. Our approach would be to use to major varieties currently being grown (2 pinto and 2 Great Northern varieties) that comprise most of the acreage in the high plains dry bean growing region.
- b. **Methodology:** This study will be conducted at the UNL-PHREC under conventional furrow irrigation in a corn-sugar beet-corn-dry bean rotation. Four dry bean varieties (Marquis, Orion, Poncho and Montrose) will be planted in 6-22 inch rows and will receive in-furrow application of FeEDDHA in 6 gallons of water at planting. Fe rates will be 0, 0.5, 1.0 and 2.0 pounds of FeEDDHA per acre. Beans will be harvested using conventional techniques. According to dry bean industry agronomists, the four varieties selected represent 75-80% of the dry bean acreage in the NE Panhandle.
- c. **Objectives.** The objective of this project is to determine the response of dry beans to FeEDDHA on a calcareous soil for the two major market classes of dry beans grown in the NE Panhandle. Visual vigor ratings, IDC scoring during the season and final yield and quality will be determined.

Core Budget: \$5000 for operating, supplies and personnel

Potential Impact of Project Results: Determining IDC and response to FeEDDHA will be important to understand as producers attain higher yields. This project will fill a knowledge gap on IDC and Fe fertilizer management that can keep dry beans a profitable cropping option.

Nebraska Dry Bean Commission

Exploring New Herbicide Programs for Weed Control in Dry Bean

Project Year: July 1, 2012- June 30, 2013

Contact Person: Robert G. Wilson; Panhandle Research and Extension Center;
308-632-1263; rwilson1@unl.edu

Project Description:

- a. **Justification.** Weed control in dry bean is a major problem faced by growers every year and for this reason 99% of the acreage is treated with a herbicide. Hairy nightshade and common lambsquarters are two weeds listed by growers as most problematic. During the 2008 growing season Valor was approved for use in dry beans. Unfortunately, 600 acres of the 8,000 acres treated with Valor were injured. Nightshade control with Valor was excellent but the concern for crop injury has resulted in limited use of the herbicide. Recent studies funded by the Dry Bean Commission have demonstrated no crop injury when Valor was applied in no-till dry bean production.
- b. **Methodology:** A field study will be developed to evaluate the effect of Valor on six different market classes of dry beans (great northern, pinto, black, yellow, red, and light red kidney beans). Three different levels of corn residue will be established: limited residue, 50% residue, and no-till into corn stubble. Valor will be utilized at 1x and 3x rates of application and applied 7 days before planting, immediately after planting, 5 days after planting, and at the dry bean cracking growth stage. Dry bean stand, vigor, and seed yield will be determined for each market class of beans.
- c. **Objective:** Determine the influence of corn residue in combination with Valor rate and application timing on dry bean injury. In hopes of determining a safe method of utilizing Valor for weed control in dry beans.

Core Budget: \$5000 for operating, supplies and personnel; Labor for plot establishment, maintenance, data collection and harvest, \$4000; plot supplies, \$250; and equipment maintenance, \$750.

Potential Impact of Project Results: Dry bean growers will be provided up to date and unbiased information that will enhance their ability to design economical and sustainable weed management programs.

Nebraska Dry Bean Commission

Developing Season Long Deficit Irrigation Strategies for Dry Bean Production

Project Year: July 1, 2012- June 30, 2013

Contact Person: C. Dean Yonts, Panhandle Research and Extension Center; 308-632-1246; cyonts1@unl.edu

Project Description:

- a. Justification. The dry bean growing region in western Nebraska experienced severe drought during the early and mid 2000's. Surface water used for irrigation was reduced and producers looked for methods to stretch available water supplies. For ground water users, the drought increased the rate at which ground water levels were dropping which resulted in additional pumping restrictions. Since dry bean requires less water, 15-16 inches, compared to most irrigated crops grown in western Nebraska, the dry bean is often viewed as an ideal crop to grow when water supplies are limited. The question however is how limited are water supplies and what impact will having less than 15-16 inches of water available to the plant have on dry bean production? In addition, if water supplies are limited, when should water be applied to limit the impact on yield? Having less water available for irrigation will continue as a result of reoccurring drought and increased demand for water resources. As a result, season long water management strategies need to be understood for different degrees of water stress situations to properly implement dry bean deficit irrigation strategies.
- b. Methodology: A small plot sprinkler irrigation system has been constructed to compare nine irrigation treatments. Five of the irrigation treatments range from 0-100% of full irrigation in 25% increments. The other four treatments include applying greater and lesser amounts of water both early and late in the growing season. Treatments will be replicated six times in a split plot randomized complete block design and will include two varieties representing different plant architectures, Matterhorn, Type IIb and Marquis, Type IIIb. Plots will be 12-22 inch rows wide and 44 feet in length. A neutron probe will be used to measure volumetric soil water content throughout the growing season. Plant stand will be measured and seed size will be determined.
- c. Objective: Determine the influence on yield of dry bean when applying less irrigation water throughout the growing season than is needed to meet the crops full water demand.

Core Budget: \$5000 for operating, supplies and personnel

Potential Impact of Project Results: Early, late and mid season water management strategies have been studied in recent years. Irrigation strategies developed from these experiments do not fit all of the potential water stress situations. In most cases the producer must make a decision on irrigation without knowledge of when and how much precipitation might occur and in some cases, when and if irrigation water is available. The design of this project will allow comparison of incremental stages of deficit irrigation throughout the season in combination with full or deficit irrigation during different stages of plant growth. Results from this work will be used along with previous research results to develop dry bean irrigation strategies for producers when water supplies are limited whether the water shortage is short term, long term, or unexpected.

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-02

PROJECT TITLE: Influence of Different Levels of Corn Residue on Preemergence and Post emergence Herbicide Performance in dry beans.

PROJECT INVESTIGATORS:
Dr. Robert Wilson

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-02, attached, and that the Commission agrees to pay the University the total sum not to exceed \$7,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-02 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$7,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$7,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

- a. The University shall:
 - (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
 - (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

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- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
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- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

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The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

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Approved:

8.16.12

Date

NEBRASKA DRY BEAN COMMISSION

Nolan L Berry

Nolan Berry, Chairman

BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA

8.22.12

Date

Jeanne Wicks

Jeanne Wicks, Director
Sponsored Programs

59553

PROJECT TITLE: Influence of Different Levels of Corn Residue on Preemergence and Postemergence Herbicide Performance in Dry Beans

PROJECT YEAR/TIME PERIOD: Final year of 3-year project

INVESTIGATORS: Robert G. Wilson
Weed Scientist
University of Nebraska
308-632-1263
rwilson1@unl.edu

JUSTIFICATION AND BACKGROUND:

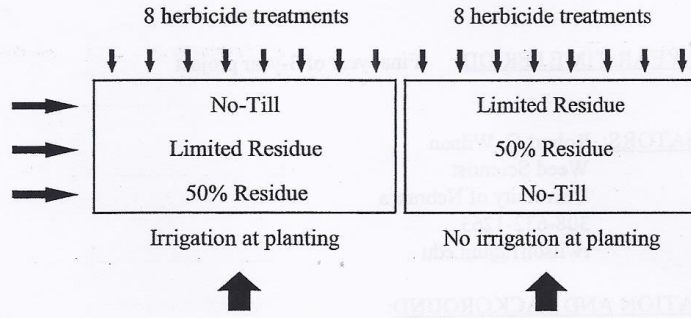
Dry bean producers in Nebraska have steadily been moving away from preplant tillage and mechanical incorporation of herbicides. Instead growers are leaving more crop residue on the surface, avoiding mechanical incorporation of herbicides, planting the crop into crop residues, and relying on herbicides applied after planting.

Growers are concerned that weed suppression is not advancing or in some cases declining when they move away from mechanical preplant herbicides and herbicides are intercepted by crop residues. Successful completion of this project will provide growers with recommendations on which herbicide programs perform the best with differing degrees of crop residue and which herbicides can be effectively washed from residues and moved to the soil to suppress weeds.

PROJECT METHODOLOGY:

This experiment will be designed to measure the influence of corn residue, irrigation after planting, herbicide efficacy, and dry bean injury. Three levels of corn residue will be utilized: limited residue, 50% coverage, and no-till into corn stubble. Half of the plot will rely on precipitation for herbicide activation and half will be irrigated the day after planting. There are five herbicides approved for use at planting that do not require mechanical incorporation: Dual Magnum, Outlook, Permit, Prowl H₂O, and Valor and each will be evaluated. Raptor plus Basagran and Permit plus Basagran can be utilized postemergence after planting and will also be evaluated, as after bean planting options. The experimental design will be a split, split plot design with four replications. Main plots will be irrigated or no irrigation at planting, subplots will be three levels of corn residue, and sub-subplots will be eight weed control treatments.

Plot Diagram



Crop residue cover on the soil surface will be measured at planting before planting pinto beans. After planting preemergence herbicides will be applied to assigned plots and after the crop reaches the first trifoliolate leaf stage postemergence herbicides will be applied. Dry bean rate of emergence, final stand, weed population, crop injury, and dry bean seed yield will be evaluated in each treatment.

OBJECTIVES:

1. Determine the influence of corn residue on herbicide performance.
2. Examine the ability of rainfall or irrigation to wash herbicides from corn residue into the soil.
3. Provide dry bean producers with a ranking of herbicide efficacy under reduced tillage cropping programs.

PROJECT LOCATION: University of Nebraska Panhandle Research & Extension Center

TECHNOLOGY TRANSFER:

Results from this trial will be shown at the annual summer field day, written into an article for the 'Bean Bag', and reports given at the Nebraska Dry Bean Reporting Session and at the January Bean Day.

For Administrative Use	PROPOSAL BUDGET	
Effective Dates 07/01/2012 -06/30/2013		
PRINCIPAL INVESTIGATOR(S): Robert Wilson		
PROJECT TITLE: Influence of Different Levels of Corn Residue on Preemergence and Postemergence Herbicide Performance in Dry Beans		
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>	FUNDS REQUESTED FOR	
	FY 13	FY
	Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>		
1. Senior Associates		
2. Research Associates – Post doctorate		
3. Other Professionals	2,300	
4. Prebaccalaureate Students	2,500	
5. Secretarial – Clerical		
6. Technical, Shop, Other		
7. Graduate Students		
B. FRINGE BENEFITS		
1. Faculty & Staff @ 30%	700	
2. Grad Student @ 36% plus Health Ins.		
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)		
D. TRAVEL		
Domestic	250	
Foreign		
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)	1,250	
F. TOTAL AMOUNT OF THIS REQUEST	7,000	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.		

BUDGET NARRATIVE:

- A. Salaries & Wages
- B. Fringe Benefits
- C. Non-expendable Capital Equipment
- D. Travel
- E. All Other Direct Costs

Revised 10/2011

23
11

BUDGET:

Direct Cost	2012 Agency Request
Summer student support	2,500
Partial technician support	2,300
Technician Fringe Benefits	700
Equipment repair and upkeep	500
Supplies and materials	500
Travel (Domestic)	250
Data analysis	250
Total	\$7,000

POTENTIAL IMPACT OF PROJECT RESULTS:

Dry bean growers will be provided with information that will enhance their ability to design economical weed management programs as they move to reduced or no-till farming systems.

Robert G. Wilson, Investigator Linda

Boeckner, Director PHREC David

Jackson, Associate Dean, ARD

BUDGET NARRATIVE
A. Salaries & Wages
B. Fringe benefits
C. Non-expendable Capital Equipment
D. Travel
E. All Other Direct Costs

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-03

PROJECT TITLE: Breeding great northern, pinto, small red, black, large red kidney, and cranberry beans for multiple disease resistance with high performance in western Nebraska.

PROJECT INVESTIGATORS: Dr. Carlos Urrea

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-03, attached, and that the Commission agrees to pay the University the total sum not to exceed \$58,700.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-03 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$58,700.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$58,700.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

NEBRASKA DRY BEAN COMMISSION

8.16.12
Date

Nolan L Berry
Nolan Berry, Chairman

8.22.12
Date

**BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA**

Jeanne Wicks
Jeanne Wicks, Director
Sponsored Programs

59569

A. Commodity Board: NEBRASKA DRY BEAN COMMISSION

B. Project Title: Breeding great northern, pinto, small red, black, large red kidney and cranberry beans for multiple disease resistance with high performance in western Nebraska.

C. Project Year/Time Period: July 1, 2009- June 30, 2012/3

D. Project Investigator: Carlos A. Urrea, PI, UNL-Panhandle Research and Extension Center, Agronomy & Horticulture, Phone: 308-632-0556, currea2@unl.edu.

E. Project Description:

1. Justification

Nebraska was first in great northern and second in light red kidney and pinto bean production in the United States in 2011. The development of improved varieties and germplasm with high yield potential, resistance to multiple diseases, greater water use efficiency, and better seed quality must be continued in order to maintain market competitiveness for the Nebraska bean industry. Breeding for disease resistance in dry beans will lead to less chemical uses favoring the environment and reducing production costs.

2. Background information

Several advanced and early generation lines of great northern, pinto, small red, black, light red kidney, and cranberry beans tested during the 2011 growing season showed promising performance. Newly released great northern variety 'Coyne' performed well in 2011. Seeds increase of 'Coyne' is under way at Idaho with projected expansion of Coyne acres in 2012. New segregant populations pyramiding genes of resistance will be made in 2011-2012 in the PHREC greenhouse based on yield and disease data collected during summer 2010. DNA marker assisted selection is being used. Exotic tropical sources of drought and heat tolerance, disease resistance, and high iron seed content tested under low water conditions in 2011 will be tested in replicated trials in 2012. The identification of such germplasm will enhance the genetic variability and the probability of getting better adapted bean lines for western Nebraska. Our program has been collaborating with breeders in Colorado, North Dakota, and Michigan through the Midwestern Regional Bean Performance Nursery (MRPN) and with breeders in Washington, Idaho, and Colorado through the Western Regional Bean Trial-WRBT. Coyne was tested in the Cooperative Dry Bean Nursery (CDBN) in more than 10 locations in 2011.

3. Methodology

Demonstration plots (Mother trial) of 5 great northern and 5 advanced pinto lines will be planted at the PHREC-Scottsbluff and in growers' fields in 2012. In 2011 and before, the lines showed high yield performance, disease resistance (common blight, bean common virus, rust, and white mold), desirable plant

architecture, and good seed quality. The same set of lines will be tested in 2012. Seed will be increased in New Zealand. The lines will be tested in some grower fields (*Baby Trials*) located in Morrill, Scotts Bluff, and Box Butte counties in 2012. The lines will be compared to the current cultivar planted at each participating farm.

Yield trials of advanced (F7-F8) and intermediate (F5-F6) great northern, pinto, small red, black, light red kidney, and cranberry bean lines will be replicated in larger plots at the PHREC at Scottsbluff and Mitchell. Seed will be increased in New Zealand. Approximately 368 intermediate great northern, pinto, black, small red, light red kidney, and cranberry lines selected for disease resistance and high yield performance during 2011 will be evaluated in 2012 in replicated plots. Great northern lines will be compared to Beryl-R, Orion, Marquis, Gemini, and Coyne. Pinto lines will be compared to Poncho, La Paz, Montrose, Buster, Baja, and Sonora. Small red lines will be compared to Merlot and UI 239. Black lines will be compared to Condor, Jaguar, and Zorro. Light red kidney lines will be compared to Cal Early, Sacramento, and Pink Panther. Cranberry lines will be compared to Capri, Bellagio, and USCR-CBB-20.

Early generation screening (F4-F5) of the 1,562 lines sent to Santa Isabel, Puerto Rico for seed increase in 2010-2011, will be conducted at the PHREC at Scottsbluff and Mitchell. Selected lines from Puerto Rico will be tested in replicated trials. Number of replications will depend on the quantity of seed harvested. Lines were selected from 24, 11, 33, 9, and 14 light red kidney, cranberry, great northern and pinto, small red, and black F2 segregant populations, respectively. Selections were based on plant aspect, plant architecture, early maturity, and disease resistance during the 2011 season at Mitchell. Additionally, another set of *early generation populations (F2-F3)* of great northern, pinto, light red kidney, small red and black beans generated in the PHREC's greenhouse during winter 2011-2012 will be advanced in larger plots. The number of rows will depend on the quantity of seed harvested in the greenhouse.

Disease screening of advanced and intermediate great northern, pinto, light red kidney, small reds, and black lines to common bacterial blight (CBB) will be conducted in a replicated trial at West Central Research and Extension Center, North Platte and at the greenhouse facilities at Scottsbluff. XAN 159, USPT-CBB-6, and Neb#1 Sel. 27 will be used as resistant checks and Orion as a susceptible check. Bean common rust will be screened at Beltsville, MD in collaboration with USDA-ARS, and at Lincoln, NE. Bean common mosaic virus will be screened at the PHREC greenhouse. Advanced great northern and pinto lines will be screened for resistance to white mold in replicated trials at the PHREC-Scottsbluff.

Exotic germplasm screening and introgression into the Nebraska elite lines will be continued during 2011-2012. Lines with resistance to several diseases, drought and heat tolerance, and high levels of iron and zinc seed content will be requested from the International Center for Tropical Agriculture (CIAT).

Newly selected great northern and pinto beans from 2011 will be included in the *Midwest Regional Performance Nursery (MRPN-2012)* to be tested in ND, CO, NE, and in the varietal trial at PHREC-Scottsbluff in 2012. These lines will also be tested in the *Western Regional Bean Trial (WRBT-2012)* in WA, CO, ID, and NE. The best adapted germplasm from those trials will be introgressed into the elite Nebraska lines considering Mesoamerican beans.

Seed increase: Ten lines (5 great northern and 5 pinto lines) will be increased in New Zealand. About 50 individual plant selections from each line will be planted. Uniform individual plant selections within each line will be harvested separately and bulked together based on seed uniformity. A winter nursery in Puerto Rico will be used to advance early generation lines.

Molecular DNA fingerprinting of our elite and advanced bean lines with molecular DNA markers will be continued in 2011 in order to characterize them before release. Several molecular DNA markers identifying resistance to rust *Ur-3* (SK-14), *Ur-6* (SBC6), *Ur-11* (Ur11-GT2), common bacterial blight (SAP6 and SU91), and bean common mosaic virus (SW13 and ROC11) will be used.

Canning of the elite great northern, pinto, light red kidney, cranberry, small reds, and black lines will be carried out at the USDA-ARS, East Lansing MI. Dry beans will be processed using a standard soak procedure. Soaked beans will be cooled and drained then, beans will be brined, exhausted, and canned using a Dixie canner model and stored for evaluation 2 weeks later.

4. Objectives

Develop and select improved high-yielding great northern, pinto, light red kidney, cranberry, black, and small red bean cultivars/germplasm for western Nebraska with multiple disease resistance. This includes selecting for plants that have upright plant architecture, earliness (95 days), and high quality seed.

Screen exotic dry bean germplasm for resistance to the most limiting diseases in the Panhandle (common bacterial blight, bean rust, bean common mosaic virus, and white mold).

Recombine elite bean lines with new sources of disease resistance.

Screen breeding lines for molecular DNA markers.

Introgress drought tolerance into Nebraska elite germplasm.

Develop data for possible release of at least one great northern and one pinto dry bean germplasm/cultivar.

F. Project Location: This proposal will be conducted at the Panhandle Research and Extension Center, Scottsbluff and Mitchell., NE Disease screening will be done at the WREC in North Platte, NE (common bacterial blight), USDA-Beltsville, MD (bean rust), and PHREC-greenhouse, Scottsbluff, NE (bean common

mosaic virus). Seed increase will be done at the Agricultural Experiment Station in Lingle, Wyoming; at the Experimental Station of 3rd Millennium Genetics in Santa Isabel, Puerto Rico; and at the Seeds Under in Blenheim, New Zealand.

G. Technology Transfer: Results will be disseminated through the Nebraska Bean Day, and Nebraska Field Days held by the Nebraska Dry Bean Growers Association in January and August 2012. Results will also be published in the Bean Bag newsletter, on the Panhandle Research and Extension Center dry bean web page (<http://panhandle.unl.edu/web/panhandlerec/drybeans>), and in the Bean Improvement and Cooperative Journal.

H. Project Budget

Salaries and wages	18,200
Travel	7,000
All other Direct costs	<u>33,500</u>
Total amount requested	58,700

This budget will be expended in the following manner:

A. Salaries and Wages (\$18,200): Hire one summer worker for a period of four months to help with field, greenhouse, and lab activities (7,200); and one in winter time to help with greenhouse activities for a period of 2 months (\$3,400). At harvest time, hire three temporary workers for a period of one month and a half (\$7,600).

E. Travel (\$7,000): Funding for local transportation and international travel is necessary. Lease of a pick-up truck for six months (\$ 330 per month plus \$0.27 per mile) for dry bean breeding activities. Travel to Puerto Rico and New Zealand to evaluate and select dry bean lines for adaptation, disease resistance, and plant type homogeneity.

D. All other Direct Costs (\$33,500):

- o **Winter nurseries:** Seed increase at Santa Isabel, Puerto Rico at \$7.20 for each 10-ft plot plus seed shipping in both directions. Seed increase at New Zealand at \$16 for each 15-ft plot plus shipping, and larger increases (2 lbs) at \$1,200 each. New Zealand is a location free of diseases.
- o **Disease evaluation:** Common bacterial blight screening at North Platte at \$2.50 for each 3-ft plot.
- o **Canning** of elite lines at a rate of \$ 10 per sample.
- o **Field supplies** (\$6,500) include fertilizer, herbicides, insecticides, fuel, and equipment maintenance. Greenhouse supplies include peat-moss soil, pot liners, fertilizer, and insecticide. Coin envelopes for planting and shipping seeds and paper bags for harvesting are

requested. Lab supplies (\$600) include DNA molecular reagents (taq DNA polymerase, dntps, SSRs, and other reagents) for use in DNA fingerprinting work.

I. Potential impact of Project Results: This request is to assist our breeding efforts to support the development and release of new great northern, pinto, light red kidney, cranberry, black and small red bean cultivar/germplasm. The great northern cultivar Coyne was released in 2008 and Foundation Seed is being produced by Treasure Valley Seed Co. in Idaho. Five great northern and five pinto lines will be tested in grower's fields to determine their adaptability and yield performance in 2012. These lines will have the potential for being released either as varieties or as germplasm in 2012-2013.

C. Urrea, Dry Bean Specialist
UNL- PHREC

L. Boeckner, District Director
UNL-PHREC

D. Duncan, Associate Dean
Agric. Research Division

For Administrative Use	PROPOSAL BUDGET	
Effective Dates	PRINCIPAL INVESTIGATOR(S): Carlos A. Urrea	
	PROJECT TITLE: Breeding great northern, pinto, small red, black, large red kidney and cranberry beans for multiple disease resistance with high performance in western Nebraska	
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>	FUNDS REQUESTED FOR	
	FY 13	FY
	Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>		
1. Senior Associates		
2. Research Associates – Post doctorate		
3. Other Professionals		
4. Prebaccalaureate Students		
5. Secretarial – Clerical		
6. Technical, Shop, Other	14,000	
7. Graduate Students		
B. FRINGE BENEFITS		
1. Faculty & Staff @ 30%	4,200	
2. Grad Student @ 36% plus Health Ins.		
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)		
D. TRAVEL		
Domestic	2,500	
Foreign	4,500	
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)	33,500	
F. TOTAL AMOUNT OF THIS REQUEST	58,700	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.		

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-04

PROJECT TITLE: Evaluation of dry bean cultivars for performance in Western Nebraska

PROJECT INVESTIGATORS: Jim Schild, Dr. Carlos Urrea

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-04, attached, and that the Commission agrees to pay the University the total sum not to exceed \$9,500.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-04 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$9,500.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$9,500.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

- a. The University shall:
 - (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
 - (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

- b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.
- c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:
 - (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
 - (2) The specific actions that will be taken against employee for violating the policy; and
 - (3) A requirement that each employee shall receive a copy of the policy.
- d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.
- e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

8.16.12

Date

NEBRASKA DRY BEAN COMMISSION

Nolan L. Berry
Nolan Berry, Chairman

BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA

8.22.12

Date

Jeanne Wicks
Jeanne Wicks, Director
Sponsored Programs

2012-2013 GRANT PROPOSAL TO THE NEBRASKA DRY BEAN COMMISSION

Project Title: Evaluation of Dry Bean Cultivars for Performance in Western Nebraska

Investigator: Jim Schild - University of Nebraska Extension Educator, Scottsbluff NE
Carlos Urrea - University of Nebraska PREC, Scottsbluff NE

Project Objective:

Evaluate new bean cultivars, bean breeding lines, and standard cultivars from the major market classes on performance in Nebraska for yield potential, maturity, disease reaction, and other adaptive traits.

Potential Benefits:

This trial will aid producers in selecting varieties for use on their farms. It will provide an opportunity to both public and private breeders to evaluate promising material in Nebraska's bean production area prior to release.

Summary of Background Information:

Nebraska growers plant approximately 140,000 acres of dry edible beans annually. A systematic evaluation of dry bean cultivars from both public and private breeding programs is needed to evaluate cultivars/lines for yield potential, as well as for other adaptive traits.

Description of Methodology:

Approximately 100 entries will be planted including entries from the Cooperative Bean Nursery in the yield trials. At least one location will be established at the Panhandle Research and Extension Center in Scottsbluff with a possible second location at the Mitchell Experiment Farm. A randomized complete block design with at least 4 replications will be used. Standard cultivars will be included for comparative purposes. Cultivars within market classes will be grouped by maturity date to facilitate mechanical harvesting. Performance measurements taken will be yield, seed size, maturity and other plant traits. Disease ratings will be taken if present. The entries in the variety trial will be screened to common bacterial blight at North Platte in a replicated trial (augmented block design). ABC-Weihsing, XAN 159, USPT-CBB-1 and -5, Tara, and Neb.#1 Sel 27 will be used as resistant checks. Data collected in 2012 will be combined and compared with the data from previous years to maintain a history of cultivar performance. Results will be made available to the Nebraska Dry Bean Commission by Nov. 1st, 2012. Comprehensive results of the trials will be made available to Nebraska dry bean growers through meetings and publications like the BEAN BAG.

For Administrative Use		PROPOSAL BUDGET	
Effective Dates 07/01/2012 – 06/30/2013			
PRINCIPAL INVESTIGATOR(S): James Schild, Carlos Urrea Florez PROJECT TITLE: Evaluation of Dry Bean Cultivars for Performance in Western Nebraska			
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>		FUNDS REQUESTED FOR	
		FY 13	FY
		Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>			
1. Senior Associates			
2. Research Associates – Post doctorate			
3. Other Professionals			
4. Prebaccalaureate Students			
5. Secretarial – Clerical			
6. Technical, Shop, Other		6,550	
7. Graduate Students			
B. FRINGE BENEFITS			
1. Faculty & Staff @ 30%		1,950	
2. Grad Student @ 36% plus Health Ins.			
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)			
D. TRAVEL			
Domestic		250	
Foreign			
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)		750	
F. TOTAL AMOUNT OF THIS REQUEST		9,500	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.			

BUDGET NARRATIVE:

- A. Salaries & Wages
- B. Fringe Benefits
- C. Non-expendable Capital Equipment
- D. Travel
- E. All Other Direct Costs

Revised 10/2011

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-05

PROJECT TITLE: Effects of residue cover, tillage and cropping system/rotation length on insect and disease pressure in dry beans.

PROJECT INVESTIGATORS: Dr. Gary Hergert, Dr. Robert Harveson, Dr. Jeff Bradshaw

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-05, attached, and that the Commission agrees to pay the University the total sum not to exceed \$12,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-05 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$12,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$12,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

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SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
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It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

8.16.12
Date

NEBRASKA DRY BEAN COMMISSION

Nolan L Berry
Nolan Berry, Chairman

Date

8.22.12

**BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA**

Jeanne W
Jeanne Wicks, Director
Sponsored Programs

H 59559

Nebraska Dry Bean Commission Research Project for 2012

Project Title/Time Period: Effects of residue cover, tillage and cropping system/rotation length on insect and disease pressure in dry beans: year 3 of a three-year project

Principal Investigators: Gary W. Hergert (PHREC, Scottsbluff, NE; 308-632-1372 ghergert1@unl.edu), Bob Harveson and Jeff Bradshaw

Project Description:

1. Justification. The acreage of dry beans being planted into some type of reduced tillage system (strip-till, no-till) continues to increase compared to conventional till. Different residue levels, tillage systems and crop rotation length (years between dry bean crops) can have significant effects on insect and disease pressure. Bacterial diseases have an affinity for surviving as saprophytes in residue and seeds that may be left on the field. The following year, surviving bacteria can multiply on emerging, contaminated volunteer beans. They can also be spread from plant debris by wind, rain and irrigation water. Numerous bacterial pathogens, such as *Curtobacterium flaccumfaciens* (wilt) and *Xanthomons axonopodis* (common blight) can survive for two to three years in residue. Insects also benefit from residue and volunteer plants, as well as from the stable environments provided by long-rotation cropping systems. For example, the western bean cutworm, *Striacosta albicosta* (Smith), a major pest of corn and dry bean, is known to have greater survival in no-till corn. Another major insect pest, the Mexican bean beetle, *Epilachna varivestis* Mulsant, also overwinters within field debris and may have higher density and winter survival in no-till fields. Additionally, other overwintering cutworms and armyworms are affected by tillage. However, beneficial insects also are conserved by long rotations and could work to counteract the potential increased survival of lepidopteran pests.

Very little information is available regarding the influence of beneficial insects against pests in dry beans. To understand the impact that evolving cropping systems and residue levels may have on dry bean production, experiments need to be conducted that compare different disease and insect levels and causative factors. Different tillage methods and residue levels change the soil temperature regime, soil bulk density and microbial interactions due to different soil moisture conditions under reduced tillage versus conventional. Lower levels of survival occur with the burial of infested straw due to the pathogen's inability to survive freely in soil. Thus different forms of tillage will encourage break-down of infested tissues, reducing the numbers and chances of bacterial survival for later crops. This is novel research because these effects have not been researched to any extent in the high plains dry bean growing region.

2. Objectives. The objective of this project is to determine differences in key beneficial insects and two major pests (i.e., the western bean cutworm and Mexican bean beetle) and dry bean bacterial diseases as influenced by tillage and soil properties.

3. Procedures. Part of this study will be conducted at the UNL-PHREC under a linear move irrigation system on a Tripp fine sandy loam that has had 3 tillage systems (conventional, no-till, strip-till) for the last 5 years. The crop rotation is corn-sugar beet-corn-dry bean with each crop present each year in a large block. This is particularly important at this time due to recent findings of pathogen bacterial wilt isolates found in association with other crops grown in rotation with beans such as wheat, corn alfalfa, and soybeans. The different tillage systems will be sampled for insects and crop residue levels of different plant pathogens. Sampling will occur in spring 2012 from 2011 crop residues, to establish background levels of bacterial pathogens and insects that may be present. Other samples will be collected later as the season progresses as a comparison. Soil properties including soil moisture and bulk density will also be determined at time of residue sampling.

Technology Transfer: Results will be presented at scientific meetings, extension meetings (field days), in periodicals (Bean Bag) and in UNL publications.

Budget:

Salaries and wages (summer students)	\$ 6,000
Materials and supplies	\$ 4,000
Travel (domestic)	<u>\$ 2,000</u>
Total	\$12,000

Potential Impact of Project Results: Determining differences in insect and disease pressure will be important to understand as producers move to reduced tillage systems and will be required to select varieties and cultural practices that can keep dry beans a profitable cropping option.

For Administrative Use		PROPOSAL BUDGET	
Effective Dates 07/1/2012 -06/30/2013			
PRINCIPAL INVESTIGATOR(S): Gary Hergert, Jeffrey Bradshaw, Robert Harveson			
PROJECT TITLE: Effects of residue cover, tillage and cropping system/rotation length on insect and disease pressure in dry beans			
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>		FUNDS REQUESTED FOR	
		FY 13	FY
		Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>			
1. Senior Associates			
2. Research Associates – Post doctorate			
3. Other Professionals			
4. Prebaccalaureate Students		6,000	
5. Secretarial – Clerical			
6. Technical, Shop, Other			
7. Graduate Students			
B. FRINGE BENEFITS			
1. Faculty & Staff @ 30%			
2. Grad Student @ 36% plus Health Ins.			
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)			
D. TRAVEL		Domestic	2,000
		Foreign	
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)		4,000	
F. TOTAL AMOUNT OF THIS REQUEST		12,000	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.			

BUDGET NARRATIVE:

- A. Salaries & Wages
- B. Fringe Benefits
- C. Non-expendable Capital Equipment
- D. Travel
- E. All Other Direct Costs

Revised 10/2011

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-06

PROJECT TITLE: Monitoring bean pathogen variation and screening breeding lines with relevant pathogen races/isolates for multiple disease resistance.

PROJECT INVESTIGATORS: Dr. James Steadman, Dr. Carlos Urrea, Dr. Robert Harveson, Jim Schild.

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-06, attached, and that the Commission agrees to pay the University the total sum not to exceed \$8,060.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-06 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$8,060.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$8,060.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

8.16.12

Date

NEBRASKA DRY BEAN COMMISSION

Nolan L Berry
Nolan Berry, Chairman

BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA

8.22.12

Date

Jeanne Wicks
Jeanne Wicks, Director
Sponsored Programs

#59573

1. **PROPOSAL:** Nebraska Dry Bean Commission
2. **PROJECT TITLE:** Monitoring bean pathogen variation and screening breeding lines with relevant pathogen races/isolates for multiple disease resistance.
3. **PROJECT PERIOD:** July 1, 2012 - June 30, 2013 (on-going project)
4. **INVESTIGATORS:** James R. Steadman, PI, IANR, Plant Pathology Dept., Lincoln
Ph: (402) 472-3163 - E-mail: jsteadman1@unl.edu
Carlos Urrea, Co-PI James Schild, Co-PI
Robert Harveson, Co-PI Serena McCoy, Rsch Tech.
5. **PROJECT DESCRIPTION:**

Justification:

The majority of the pinto and great northern (GN) varieties grown in Nebraska and adjacent areas are susceptible to many diseases, including rust, root rot and white mold. Rust is a disease that is caused by a pathogen that has numerous races (ability to infect beans with different resistance genes). The resistance gene Ur-3 found in Beryl R. and Coyne, among others, has been resistant to the rust races found on the U.S. Central High Plains in the past two decades. However, other varieties such as 'Orion' and 'Marquis', and varieties in other seed classes that comprise large bean acreages in the North and South Platte Valleys are susceptible to rust as well as root rot and white mold. North Dakota and Michigan bean production areas have races able to cause a susceptible reaction on varieties and lines with the Ur-3 and Ur-6 genes. In the past decade we have found similar races in NE screening nurseries but not in commercial fields. We have proactively pyramided rust resistances genes in breeding lines with resistance to these and other races. Rust will be monitored each season to enable us to test lines in Dr. Urrea's breeding program with appropriate races and select for broad rust resistance. Similarly, root rot and white mold are diseases that need to be considered when selecting for water use efficiency and long-term multiple disease resistance, respectively. Appropriate isolates or subspecies of the pathogens will be available for screening by isolating from susceptible beans annually. We work closely with the USDA in Beltsville, as well as Howard Schwartz, at Colorado State University, and other plant pathologists in the region in screening for white mold, root rot and rust.

A bean variety with disease resistance has value derived from cost savings of fungicide applications and higher yields compared to other varieties under moderate to severe disease pressure. In addition, since rust and white mold can cause seed size reduction and discoloration, marketing problems due to lower grades would cause further losses. Disease resistance maintains seed quality under conditions favorable for disease, but most importantly, reduces cost of production without cost to growers. Similarly, water use efficiency, an objective of the bean breeding program, would be negatively affected by root rot. Drought tolerance and root rot resistance need to be screened together to address improved water use efficiency.

Background:

My laboratory has had a pathogen monitoring program to guide deployment of strategies to manage diseases of dry beans, especially through bean breeding, since 1970. Our rust and white mold pathogen collection contains over 300 races and subspecies isolates that provide a database to compare new pathogen isolate collections. Thus, we are able to challenge breeding lines not only with relevant local races but also protect the crop for the future by using virulent races that could blow in from the south or be brought in with contaminated seed. Using multiple races, we can thus select for resistance that will involve multiple genes and be stable over time. We also have access to multi-site testing of promising partially resistant bean lines through a USDA special Sclerotinia Initiative grant.

Revised 10/2011

This grant will help identify partial resistance for the breeding program to build some protection against white mold damage into future varieties; something that previously was not available.

The collaboration and cooperation within the NE bean breeding/pathology programs and other members of the 'bean team' provide our industry with research that reduces costs of production. Nebraska also benefits from our interaction with North Dakota, Michigan, Colorado, USDA and industry scientists. The recently released the great northern 'Coyne' with high yield, excellent seed quality, and strong common blight, rust and bean common mosaic resistances is a product of that collaboration.

With access to research information and improved germplasm from collaborators as well as our own monitoring of rust and other pathogen variability, we are positioned to develop disease resistant bean varieties and management strategies to help the Nebraska Bean Industry to be a low cost producer of high quality GN and pinto beans. We are also assisting in developing adapted red, black and other seed classes with disease resistance.

Methodology:

Bean rust race variation will be monitored in the North and South Platte Valleys wherever rust is reported. We depend on help from growers, dealers, field scouts, extension educators, aerial applicators and anyone with an interest in locating rust throughout the growing season. We also monitor other relevant pathogen isolates used to screen breeding lines. We have excellent greenhouse and laboratory facilities, expertise, and relevant pathogen collections to help the breeding program incorporate resistance into elite dry bean lines.

Objectives and Procedures:

- (A) Monitor races of the bean rust pathogen and isolates of *Sclerotinia sclerotiorum* in bean fields in Nebraska and, monitor adjacent bean growing areas. Mobile nurseries containing bean lines with different rust resistance genes will be used to monitor rust infection areas. If rust develops on a source of a resistance gene(s), leaf samples will be collected at each mobile nursery site and analyzed in Lincoln. Sclerotia of the white mold pathogen will be collected and characterized to identify clones and levels of aggressiveness. Root rot isolates also will be identified.
- (B) Utilize races identified in sampling, especially any found with high virulence, as well as isolates of *S. sclerotiorum* and *R. solani* to screen breeding lines and recombinant inbred lines used to develop molecular markers for disease resistance genes in collaboration with Dr. Urrea.

6. PROJECT LOCATIONS: UNL and PHREC

I often use students to assist in the bean rust and other pathogen research (and for recruitment). Serena McCoy is funded on grant funds so some support for her salary is included. We have to pay greenhouse rental costs since state funds do not cover costs of lights, maintenance, fertilizer, watering, etc. Travel for one or more trips from Lincoln to Scottsbluff and one trip to Beltsville for breeding line rust/agronomic trait evaluation is also included

7. TECHNOLOGY TRANSFER:

The Bean Field Day at PHREC, Bean Bag articles, Bean Improvement Cooperative reports, and new varieties and germplasm released will bring our research to the growers and the bean industry.

8. PROJECT BUDGET:

Revised 10/2011

For Administrative Use		PROPOSAL BUDGET	
Effective Dates July 1, 2012 – June 30, 2013			
PRINCIPAL INVESTIGATOR(S): J.R. Steadman, PI; R. Harveson, J. Schild and C. Urrea, Co-PIs PROJECT TITLE: Monitoring bean pathogen variation and screening breeding lines with relevant pathogen races/isolates for multiple disease resistance.			
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>		FUNDS REQUESTED FOR	
		FY 13	FY
		Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>			
1. Senior Associates			
2. Research Associates – Post doctorate			
3. Other Professionals			
4. Prebaccalaureate Students		\$2000	
5. Secretarial – Clerical			
6. Technical, Shop, Other		\$2700	
7. Graduate Students			
B. FRINGE BENEFITS			
1. Faculty & Staff @ 30%		\$810	
2. Grad Student @ 36% plus Health Ins.			
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)			
D. TRAVEL			
Domestic		\$1500	
Foreign			
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)		\$1050	
F. TOTAL AMOUNT OF THIS REQUEST		\$8,060	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.			

BUDGET NARRATIVE:

- A. Salaries & Wages
Technologist 2 mos. @\$1,350 per month
- B. Fringe Benefits - Estimated at 30% for technologist
- C. Travel - Domestic trips between Lincoln and Scottsbluff and one trip to USDA in Maryland
- D. All Other Direct Costs
Soil, Trays, Pots, DNA Analysis \$500, Greenhouse Rental \$550

Revised 10/2011

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-07

PROJECT TITLE: Optimum plant population of dry beans as influenced by plant architecture.

PROJECT INVESTIGATORS: Jim Schild.

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-07, attached, and that the Commission agrees to pay the University the total sum not to exceed \$4,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-07 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$4,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$4,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

8.16.12
Date

NEBRASKA DRY BEAN COMMISSION

Nolan L Berry
Nolan Berry, Chairman

8.22.12
Date

**BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA**

Jeanne Wicks
Jeanne Wicks, Director
Sponsored Programs

Project Description:

Justification:

Over the past 10 years, the dry bean industry in the United States has grown by 100% in production. The majority of this increase is in the dry bean market. Most countries have responded to this demand with an increase in production. The United States has maintained a production of approximately 1.5 million bushels of dry beans per year. With the projected increase in demand for dry beans, the United States will need to increase its production of dry beans. The Nebraska Dry Bean Commission is planning to increase its production of dry beans by 100% over the next 10 years.

Background:

The Nebraska Dry Bean Commission was formed in 1991. The commission's mission is to promote the production and marketing of dry beans in Nebraska. The commission has been successful in increasing the production of dry beans in Nebraska from 1.5 million bushels in 1991 to 1.5 million bushels in 2011. The commission has also been successful in increasing the marketing of dry beans in Nebraska from 1.5 million bushels in 1991 to 1.5 million bushels in 2011.

In the summer of 2011, the Nebraska Dry Bean Commission conducted a survey of Nebraska dry bean growers. The survey found that 75% of growers were producing dry beans on 100 acres or less. The survey also found that 75% of growers were producing dry beans on 100 acres or less. The survey also found that 75% of growers were producing dry beans on 100 acres or less.

Methodology:

Three dry bean varieties will be selected for production on 100 acres of type I, type II and type III ground water. The trial will be planted during the summer of 2012. The trial will be planted during the summer of 2012. The trial will be planted during the summer of 2012.

59523

Proposal submitted to:
Nebraska Dry Bean Commission

Project Title:
Optimum Plant Population of Dry Beans as Influenced by Plant Architecture

Project Year:
2012 - This project is planned to be conducted over three growing seasons (2012-2014) to allow for evaluation of a range of climatic conditions experienced in western Nebraska.

Co-Principal Investigator:
Jim Schild, Extension Educator
C. Dean Yonts, Irrigation Engineer

University of Nebraska,
Panhandle Research and Extension Center
Scottsbluff, Nebraska 69361
Ph 308-632-1230

Project Description:

Justification:
Direct harvest of dry beans has been increasing in the last few years as growers look to no till operations. This trend has led to an interest in a more upright dry bean variety. Plant breeders have responded and are producing varieties with an upright characteristic. Dry beans have been traditionally grown at populations in the neighbourhood of 80,000 plants per acre. With the upright habit and less ability to fill in open spaces, the question arises what is the optimum plant population of some of these different plant types. Growers are currently planting dry beans at populations from 60,000 to 120,000 plants per acre depending on variety and experience.

Background:
The traditional dry bean variety that was grown 40 years ago, when plant population work was conducted, was a strong vining type of dry bean classed as 3b growth habit. Due to disease and maturity issues dry beans in the late 1990's were bred for shorter vining characteristics a 3a growth habit. As direct harvest interest increased, dry beans were being bred for an upright soybean like characteristic 2b. Growers continued to grow these varieties at traditional planting rates.

In the summer of 2011 numerous hail and wind storms hit the Nebraska dry bean growing region. Growers were left with low stand populations after normal dry bean planting cutoff dates. Questions arose as to what the minimum population is needed to keep a field, replant beans, or go to another crop.

Methodology:
Three dry bean varieties will be selected that best show the traits of a type I, type II and type III growth habit. The trial will be planted during the optimum dry bean planting time. Plots will be 25 feet long and 4 rows wide planted with a Hege cone planter in 22 inch rows. Each treatment will be replicated 6 times in a randomized complete block design. Plots will be treated with a standard herbicide program and hand weeded throughout the season to eliminate weeds as a source of yield reduction.

Time of canopy closure and soil water content will be taken periodically during the growing season. Plots will be harvested based on maturity. Days to maturity will be observed and seed yield, test weight, moisture content, and size will be determined for all plots.

Objective:

Understand how plant population and plant growth habit influence canopy closure, pod and seed development, plant maturity and yield of dry bean.

Project Location:

The study will be conducted at the University of Nebraska, Panhandle Research and Extension Center

Technology Transfer:

Results will be included in NebGuide publications that are available as both hard copy or on the University web site. Results will be discussed during the progress of the experiment during field tours and educational conferences.

Project Budget:

ITEM	2012
Labor	\$2,260
Fringe Benefits	\$ 740
Plot supplies and monitoring equipment	\$ 500
Travel (Domestic)	\$ 500
Total	\$4,000

Potential Impact:

Dry bean varieties are being bred for an upright plant structure. Little work has been done on this plant growth habit for optimum plant populations and to understand how plant growth habit affects crop canopy closure. This information will give growers needed information on what is the best planting rate for these different plant growth habits.

For Administrative Use	PROPOSAL BUDGET	
Effective Dates 07/1/2012-06/30/2013		
PRINCIPAL INVESTIGATOR(S): C Yonts, James Schild		
PROJECT TITLE: Optimum Plant Population of Dry Beans as Influenced by Plant Architecture		
PROPOSED BUDGET SUMMARY <i>See Narrative Below</i>	FUNDS REQUESTED FOR	
	FY 13	FY
	Year 1	Year 2
A. SALARIES AND WAGES <i>Commodity Board usually does not pay the cost for Project Investigators</i>		
1. Senior Associates		
2. Research Associates – Post doctorate		
3. Other Professionals	1,155	
4. Prebaccalaureate Students	1,500	
5. Secretarial – Clerical		
6. Technical, Shop, Other		
7. Graduate Students		
B. FRINGE BENEFITS		
1. Faculty & Staff @ 30%	345	
2. Grad Student @ 36% plus Health Ins.		
C. NON-EXPENDABLE CAPITAL EQUIPMENT (\$5,000 or more; more than 2 years use)		
D. TRAVEL		
Domestic	500	
Foreign		
E. ALL OTHER DIRECT COSTS - Materials & Supplies, Subcontracts, Publication Costs, etc. (Budget Narrative should list these individual items and dollar amounts separately)	500	
F. TOTAL AMOUNT OF THIS REQUEST	4,000	
INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.		

BUDGET NARRATIVE:

- A. Salaries & Wages
- B. Fringe Benefits
- C. Non-expendable Capital Equipment
- D. Travel
- E. All Other Direct Costs

Revised 10/2011

AGREEMENT
between
BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA
and
NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-08

PROJECT TITLE: Identifying sources and mapping genes for bacterial wilt resistance in dry beans.

PROJECT INVESTIGATORS: Dr. Carlos Urrea.

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 16th day of August, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-08, attached, and that the Commission agrees to pay the University the total sum not to exceed \$6,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-08 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$6,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$6,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission.
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University.

Approved:

NEBRASKA DRY BEAN COMMISSION

Date

Nolan Berry, Chairman

**BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA**

Date

Jeanne Wicks, Director
Sponsored Programs

NU grant 55089

A. Commodity Board: NEBRASKA DRY BEAN COMMISSION

B. Project Title: Identifying sources and mapping genes for bacterial wilt resistance in dry beans.

C. Project Year/Time Period: July 1, 2011- June 30, 2012/1

D. Project Investigators: Carlos A. Urrea, PI, UNL-Panhandle Research and Extension Center, Agronomy & Horticulture, Phone: 308-632-0556, currea2@unl.edu

3

E. Project Description:

1. Justification

Bacterial wilt, caused by *Curtobacterium flaccumfaciens* pv. *Flaccumfaciens*, was one of the more problematic diseases of dry bean (*Phaseolus vulgaris* L.) throughout the irrigated High Plains (Colorado, Nebraska, and Wyoming) in the 1960s and early 1970s. Recently bacterial wilt re-emerged as a problem when it was detected in more than 300 fields in Nebraska, Colorado, and Wyoming in 2006. Affected fields were planted with dry beans from multiple market classes and seed sources, including yellow, great northern, and pinto beans. Bacterial wilt reduces seed quality and in some instances 10% of the total yield is discolored. This pathogen is considered an A2 quarantine pest for Europe and is subject to phytosanitary regulations in some countries and some states in the US. In addition, there are some health concerns. These issues could make it difficult for the Nebraska dry bean industry to market their beans. Very few sources of bacterial wilt resistance have been reported. Emerson, which has a large bright white seed coat, was released in 1971 by the University of Nebraska and has some resistance to bacterial wilt, halo blight, brown spot, and bean common mosaic virus. There is no information on mapping the bacterial wilt resistance genes.

2. Background information

In 2008 the Nebraska Dry Bean Commission funded the screening of the International Center for Tropical Agriculture (CIAT) dry bean core collection. A wild bean from the US dry bean core collection has been identified as a source of resistance. Sixteen genotypes from CIAT's collection showed resistance in 3 replicates so far. Results from three inoculations showed that 99.9 % of the US dry bean core collection was susceptible to bacterial wilt, and only 0.1% showed variability across the evaluations. This means that either no resistance is found in these lines, or that they may be segregating for resistance to the disease. The current cultivars Marquis, Orion, Beryl, Gemini, and La Paz were susceptible in all three inoculations. Thus, there is need to identify sources of resistance to bacterial wilt, study the genetics and map the genes.

3. Methodology

4. Objectives

- Study the genetics and map the genes of bacterial wilt resistance.
- Transfer bacterial wilt resistance into Nebraska elite great northern and pinto bean lines.

F. Project Location: This research will be conducted in the dry bean greenhouse and molecular lab facilities located at the Panhandle Research and Extension Center, Scottsbluff, NE.

G. Technology Transfer: Results will be disseminated through the Nebraska Bean Day, and Nebraska Field Days held by the Nebraska Dry Bean Growers Association in January and August 2012. Results will also be published in the Bean Bag newsletter, on the Panhandle Research and Extension Center dry bean web page (<http://panhandle.unl.edu/web/panhandlerec/drybeans>), and in the Bean Improvement and Cooperative Journal.

H. Project Budget

Materials and Supplies	6,000
Total amount requested	6,000

This budget will be expended in the following manner:

A. Materials and supplies: Supper fine germinating mix (5 bags x \$25 each) (\$ 125); Media and petri dishes (\$200). DNA molecular reagents (taq DNA polymerase, dntps, SSRs, and other reagents) for use in DNA fingerprinting work in the molecular lab (\$5,675).

I. Potential Impact of Project Results

Since bacterial wilt is a re-emerging disease in the high plains and previous breeding efforts were stopped in the early 70s, there is a need to identify new sources of resistance and transfer those genes into the currently grown cultivars. Development of resistance is important because bacterial wilt is already an A2 quarantine pest and some restrictions could be applied to beans used as food, which would adversely affect the Nebraska bean industry. Pyramiding of bacterial wilt resistance genes is the recommended technique for incorporating resistance into new cultivars. Release of bean varieties with disease resistance will lower production costs and reduce pesticide use.

For Administrative Use Revised 10/06		FY ____	
PROPOSAL BUDGET			
Effective Dates			
PRINCIPAL INVESTIGATOR(S): Carlos A. Urrea			
PROJECT TITLE: Identifying sources and mapping genes for bacterial wilt resistance in dry beans			
PROPOSED BUDGET SUMMARY <i>Attach Supplemental Detail for Items \$5,000 or more</i>		FUNDS REQUESTED FOR	
		Year 1	Year 2
A. SALARIES AND WAGES			
1. Principal Investigator(s) <i>Commodity Board usually does not pay the cost</i>			
2. Senior Associates			
3. Research Associates – Post doctorate			
4. Other Professionals			
5. Prebaccalaureate Students			
6. Secretarial – Clerical			
7. Technical, Shop, Other			
B-1. FRINGE BENEFITS (Faculty & Staff) @ 28%			
8. Graduate Students			
B-2. FRINGE BENEFITS (Grad Student) @36% plus Health Ins.			
C. EXPENDABLE MATERIALS AND SUPPLIES (Attach supporting data)			
Operating Supplies		6,000	6,000
Operating Expenses/Services			
D. PUBLICATION COSTS			
E. TRAVEL			
Domestic			
Foreign			
F. SUBCONTRACTS (Attach separate budget pages for each)			
G. ALL OTHER DIRECT COSTS (Attach supporting data. List items & dollar amounts.)			
H. NON-EXPENDABLE CAPITAL EQUIPMENT (\$500 or more; more than 2 years use)			
I. INDIRECT COSTS (INSTITUTIONAL INVESTMENT*)		-0-	-0-
J. TOTAL AMOUNT OF THIS REQUEST		6,000	6,000

* INSTITUTIONAL INVESTMENT: The University of Nebraska-Lincoln is committed to providing Institutional resources necessary to successfully implement and complete this project.

AGREEMENT

between

BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA

and

NEBRASKA DRY BEAN COMMISSION

CONTRACT NUMBER: DB 2012-09

PROJECT TITLE: Incorporating dry-edible beans into noodles to improve product nutritional value (phase II)

PROJECT INVESTIGATORS: Dr. Wajira Ratnayake, Ph.D., Research Assistant Professor, The Food Processing Center, University of Nebraska-Lincoln.

This Agreement, entered into by and between the Board of Regents of the University of Nebraska, hereinafter called the "University" and the Nebraska Dry Bean Commission, hereinafter called the "Commission", is made this 3rd day of October, 2012. Said parties agree that the University will perform the work set in the proposal of DB 2012-09, attached, and that the Commission agrees to pay the University the total sum not to exceed \$15,000.00.

PERFORMANCE SCHEDULE:

Performance of the work set out in the proposal for DB 2012-09 will occur during the period of July 1, 2012 through June 30, 2013.

ALLOWABLE COSTS:

The total cost of performance of the contract is not to exceed \$15,000.00

METHOD OF PAYMENT:

Actual cost incurred not to exceed \$15,000.00. An advanced payment may be requested by the University for obligations incurred related to this project for the first six months work by submission of an Interagency Billing Transaction (IBT). A final payment will be made upon completion of the project for obligations incurred and invoiced on an IBT. In the event the Commission's funds available are insufficient at any time to enable the Commission to pay aforesaid agreed compensation, due to insufficient receipts from the dry edible bean check-off funds, the Commission giving the University a 60-day written notification of amount of such reduction may reduce the amount of aforesaid "payment" at any time.

ACCOUNTING EXPENDITURE REPORTS:

The University shall provide a semi-annual statement of actual expenses incurred through December 31st and at the conclusion of the project. Any unexpended balance shall be refunded within 90 days or the termination of the project.

SPECIAL PROVISIONS:

The parties mutually agree as follows:

a. The University shall:

- (1) Not discriminate against recipients of services on the basis of race, color, religion, national origin, sex, disability, or age; and
- (2) Not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, or qualified disability.

It is further understood and agreed that, if the University is in violation of this clause, it shall be barred forthwith from receiving further funds, unless a satisfactory showing is made indicating discriminatory practices have terminated and a recurrence of such act or action is unlikely.

b. This Agreement incorporates the complete understanding of the parties. Any modification of the Agreement shall be in writing and executed by each party of the Agreement to be valid.

c. The University agrees to have in force, during the Agreement period and available for inspection, a policy regarding a drug-free workplace. The policy shall contain:

- (1) A statement notifying employees that the unlawful manufacture, distribution, possession, or use of a controlled substance is prohibited in the University's workplace;
- (2) The specific actions that will be taken against employee for violating the policy; and
- (3) A requirement that each employee shall receive a copy of the policy.

d. To the extent permitted by law, the University shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the University to perform such duties for the Commission as herein specified. This obligation shall survive the expiration or termination of this Agreement.

e. The books of account, files, and other records of the University, which are applicable to this Agreement, shall be available for inspection, review, and audit by the Commission and its representatives to determine the proper application and use of all funds paid to and for the account or benefit of the University. If any litigation or audit is begun or a claim is instituted involving the Agreement, the University shall retain the records beyond the five (5) year period until litigation, audit findings, or any claims have been fully resolved and the Commission has agreed that such records no longer need to be retained.

- f. The Commission may pay for meals and/or related travel expense for Representatives of the University, with Commission approval, if such expenses apply to projects included in this contractual agreement or to report to the Commission on the on-going activities of the Contractor. These expenses shall be appropriately accounted for and reported to the Commission..
- g. The University specifically agrees that funds given to the University shall be used only for the projects and purposes enumerated herein, and further acknowledges that expenditures shall not be used for political activity.
- h. Any funds paid to the University, under this Agreement and not fully utilized and earned, pursuant to this Agreement during the Agreement period, shall be returned to the Commission, unless otherwise agreed. Furthermore, if the University fails to perform the duties as outlined herein, the University shall be required to repay any unearned funds received under this Agreement.
- i. This Agreement is not assignable without the express written approval of the Commission.
- j. This Agreement may be terminated by either of the parties hereto at any time by giving thirty (30) days advance written notice to the other party.
- k. The relationship of the Commission and the University, under this Agreement, shall be that of principal and independent contractor. It is understood by both the Commission and the University that the University is not an employee of the Commission. It is understood that the Commission assumes no responsibility beyond those specifically stated in this Agreement.
- l. All provision of this Agreement are subject to the Americans with Disabilities Act.
- m. The University guarantees payment of compensation to injured workers according to the Nebraska Workers Compensation Act.

PERIODIC PROGRESS REPORTS:

The University shall provide the Commission with current year progress reports (written and verbal), at the November Research Planning meeting or upon request by the Commission. A final written summary will be submitted to the Commission at the conclusion of the project or April 1, 2013. The University shall publish the results of all Commission-funded research in The Bean Bag and provide electronic copies of research reports to the Commission for publication on the Commission web page.

TERMINATION/AMENDMENT

Whereas the parties to this agreement are both "agencies" of the State of Nebraska, this Agreement may be terminated by either party, upon sixty (60) days written notice, due to insufficient funding or appropriation. Revision or amendment of the Agreement may be made at any time upon written approval of the Commission and the University

Approved:

Date 10.4.12

NEBRASKA DRY BEAN COMMISSION

Nolan Berry
Nolan Berry, Chairman

**BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA**

Date 10/22/12

Jeanne Wicks
Jeanne Wicks, Director
Sponsored Programs

Nebraska Dry Bean Commission
(Invited project proposal, Submitted to Ms. Lynn Reuter)

Project Title: Incorporating dry-edible beans into noodles to improve product nutritional value (Phase II)

Project coordinator/Principal Investigator:

Wajira S. Ratnayake, Ph.D. (Research Assistant Professor),
The Food Processing Center, 222 Food Industry Complex,
University of Nebraska-Lincoln, Lincoln, NE 68583-0930.
Tel. (402)472-2142, Fax. (402)472-1693, Email. wratnayake2@unl.edu

Project Purpose/Background:

Noodle, a widely consumed food product around the world, is prepared using a variety of raw material; wheat, rice, buckwheat, etc. The selection of raw material for noodle preparation depends on region, culture, and type/variety of product. The main ingredients in most noodle formulations are wheat flour, water and salt [1]. Depending on the type of noodles, other ingredients, such as egg, flavors, colors, and preservatives are also used, in relatively small amounts, in the formulations. As a result, the nutritional value of noodles is extremely low, compared to most other commonly consumed foods. Very limited research has been conducted on fortifying noodles formulations with legume-based ingredients to improve nutritional value. It has been found that the nutritional value of noodles could be improved by fortifying with garbanzo bean flour [2].

Nebraska-grown dry beans have not been tested in common food formulations, such as noodles. In our opinion, there is a very high possibility of using dry-edible bean-based ingredients in commercial noodles formulations, to improve the nutritional value of the product, specially in terms of improving protein and fiber contents. It is also important to note that successful research and development work in this area would create additional opportunities in international commerce for Nebraska dry-beans. For example, the rapid income growth has been changing the nature of food expenditure by consumers in China. With the increasing household income, there is a greater consumer demand for both quantity and higher quality food. Since mid-2000's, Chinese households are reaching a saturation point in the quantity of food consumed, and as a result, turning more towards higher quality foods [3].

In this proposed research, we (UNL Food Processing Center) plan to conduct investigations on utilizing dry-edible beans in noodles, which are commonly consumed as convenient foods. Our previous research has proved that Nebraska grown dry-beans, such as Great Northern bean [4], could be used for the proposed work. Improving the nutritional value of such commonly consumed products would benefit both the consumers (with improved nutrition) as well as dry-bean producers (additional income by exploiting new emerging markets for the commodity). Phase I of this project was completed by 02nd July 2012, prior to the arrival of reverse trade mission from China. The results of work conducted under Phase I will be used

to finalize processing operations and perform scale-up tests with the noodle manufacturing machine, which will be acquired to conduct the proposed work.

Work Plan:

The proposed research project, to develop commercially successful ingredient formulations to incorporate dry-edible bean into noodles, will involve the following:

- Identification and confirmation of optimum dry-edible bean (Great Northern and Pinto beans) ingredient formulations for commercial products.
- Testing improved nutritional values and qualities of dry-edible bean containing ingredient formulations.
- Pilot-scale product processing tests at The Food Processing Center, Pilot Plants to verify optimum processing conditions.
- Product testing and quality evaluations.

The anticipated start of activities is 01st Oct 2012. All project activities are expected to be completed prior to 31st Aug. 2013. All experiments will be conducted in the FPC Pilot-Plants and in Dr. Ratnayake's laboratories (17.5 and 239, Food Industry Complex), which are well equipped to conduct all the required tests and analyses for this project.

Deliverables:

The proposed work will end by the end of Aug. 31, 2013. At the end of the project, we will have created, at least two, different varieties of instant noodles with improved nutritional profiles, by incorporating dry-edible bean (Great Northern and Pinto) flour.

The results/outcomes will be presented at the proposed conference on utilization of dry-edible beans in food processing, in late Aug. 2013, in Beijing (pending invitations).

The research outcomes will also be presented at other professional meetings (such as Institute of Food Technologists Annual Meeting), and published in scientific journals, as appropriate.

Project personnel:

One part-time undergraduate student and one Graduate Research Assistant* will perform all the activities under direct supervision of Dr. Ratnayake. Other personnel (including Ms. Hui (Mary) Wang, and Ms. Liya (Maria) Mo – Graduate Research Assistants), will assist with the proposed work, as required.

*The Graduate Research Assistant (Ms. Liya (Maria) Mo – who has previous experience in similar research, and has a Bachelor's degree in Food Science & Engineering from Yangzhou University, China) has already been admitted to UNL Food Science & Technology graduate program to work on this project.

Calendar of activities:

Activity	Time (Month)							
	1	2	3	4	5	6	7	8
Equipment setup, sample acquisition, preliminary testing**	X	X						
Preliminary testing on ingredient blends			X	X	X	X		
Product development and testing						X	X	X
Dissemination and publication of results								X

**Using the (proposed) newly acquired noodle manufacturing machine.

X = Time of specific activity.

Budget Narrative:

The Phase I of this project was previously funded by the Nebraska Department of Agriculture. Work performed under Phase I is excluded from this budget.

Category	NDA funds	Total
Personnel	\$10,182	\$10,182
Travel	\$1,000	\$1,000
Equipment	\$250	\$250
Supplies	\$3,568	\$3,568
Contractual		\$0
Indirect Costs		\$0
Total	\$15,000	\$15,000

We are requesting an amount of \$15,000 from the Nebraska Dry Bean Commission, for this project.

Travel:

To partially cover the expenses of project personnel attending the 2013 Institute of Food Technologists (IFT) annual meeting in Chicago (June 13-16) to present the project findings.

Equipment:

For operating supplies and maintenance of noodle manufacturing system.

Supplies:

The amount of \$3,568 requested for supplies will be utilized as follows:

Ingredients, formulation supplies, including gums and stabilizers ¹	\$1,250.00
Supplies/material for pilot plant operations ²	\$1,000.00
General laboratory supplies ³	\$1,318.00

¹Supplies required for bench-top formulations and product analyses.

²Ingredients, supplies, and consumable required for pilot plant processing operations.

³Include safety-ware for project personnel, cleaning supplies, and expenses involved with disposal of used materials/chemicals, etc.

There are no contractual expenses involved with project work. No direct incomes are expected for the project.

Project Oversight:

The project will be coordinated and supervised by Dr. Wajira S. Ratnayake, who has previous experience in related research [5]. Dr. Ratnayake will also serve as the Principal Investigator (PI) and the Major Advisor of the graduate Research Assistants who will conduct majority of the laboratory experiments and pilot plant trials, with the assistance of other personnel.

Project Commitment:

Both the Food Processing Center and the Department of Food Science & Technology of UNL strongly believe this project will be of paramount importance in developing value added, commercially sustainable food products from Nebraska-grown dry-edible beans. The Food Processing Center will utilize its scientific and technical expertise, while the Department of Food Science & Technology will contribute to the project by offering an educational opportunity to the Graduate Research Assistant who will work in this project.

ADM Company (Decatur, IL) has already provided commercial grade, bean flour samples required for this project.

References:

- [1] Fu, B. X., Asian noodles: History, classification, raw materials, and processing. *Food Research International* 2008, 41, 888-902.
- [2] Lee, L., Baik, B.-K., Czuchajowska, Z., Garbanzo Bean Flour Usage in Cantonese Noodles. *Journal of Food Science* 1998, 63, 552-558.
- [3] Gale, H. F., Huang, K., *Demand for Food Quantity and Quality in China*, United States Department of Agriculture (USDA) - Economic Research Service (ERS), Washington, D.C. 2007.
- [4] Wang, H., Korte, S., Kerrigan, M., Ratnayake, W. S., Flores, R. A., *Institute of Food Technologists Annual Meeting*, Las Vegas, NV 2012.
- ^ [5] Hoover, R., Ratnayake, W. S., Starch characteristics of black bean, chick pea, lentil, navy bean and pinto bean cultivars grown in Canada. *Food Chemistry* 2002, 78, 489-498.

JAN-17-2011 16:00 FROM:USDBC
Jan 11 11 03:35P

Lynn Reuter

6054940304

TO:19896740007
308-632-1371

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P.1

**MEMBERSHIP SERVICE AGREEMENT
BETWEEN THE
NEBRASKA DRY BEAN COMMISSION
AND THE
UNITED STATES DRY BEAN COUNCIL**

This Membership Service Agreement ("Agreement") is made the 11th day of December, 2010, by and between the Nebraska Dry Bean Commission ("Commission") and the United States Dry Bean Council ("Council"). The parties agree that the Council will provide membership services to the Commission as provided in the By-Laws of the Council and as set forth herein. The parties further agree that the Commission will pay the Council a Membership fee as established by the Council's Board of Directors.

Term of Agreement: The term of this agreement shall begin on January 1, 2011 and will automatically renew on January 1st of each year. Either party can terminate this agreement at any time with a 30 day advance notice in writing to the other party.

Membership Fee: The Commission shall remit to the Council a Membership fee that is established in accordance with a formula approved by the Council's Board of Directors. This fee shall not exceed \$75,000 annually. The Commission shall remit one half of the Membership fee to the Council on or before January 1 and one half on or before July 1 of each year this agreement is in effect.

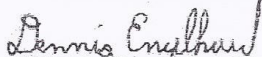
Accounting/Expenditure Reports: The Council will provide the Commission with at least quarterly income and expense reports. Such statements shall include year to date totals of Council income and expenses. The Council will also provide at least semi-annual financial updates of the programs funded by the Commodity Credit Corporation (CCC). The books of accounts, files and other records of the Council, which are applicable to this agreement, shall be available to determine the proper application and use of all funds paid to or for the account or benefit of the Council.

FAS Funds/Programs: The Council shall act as a liaison between the Foreign Agricultural Service (FAS) and the Commission for purposes of participating in Market Access Program (MAP), Foreign Market Development (FMD) or other federally funded programs. Further, the Commission may submit proposals to the Council's International Programs Committee for consideration to include in the Council's annual MAP and FMD funding application.


The Council shall indemnify and hold harmless the Commission from any and all claims and liabilities, including costs and legal fees that may arise out of or on account of any failure on the part of the Council to perform. This obligation shall survive the expiration or termination of this Agreement.

The Commission shall not be liable for the reimbursement of MAP or FMD funds for any activity in which the Commission does not have the opportunity to actively participate.

United States Dry Bean Council


Dennis Englehard, President

Nebraska Dry Bean Commission


Nolan L. Berry, Chairman

