

**COLLABORATIVE AGREEMENT BETWEEN NORTH DAKOTA STATE UNIVERSITY (NDSU)
AND INSTITUTO DE INVESTIGACIONES AGROPECUARIAS (INIA)**

I. INTRODUCTION

The North Dakota Agricultural Experiment Station, along with the NDSU Extension Service, and the Instituto de Investigaciones Agropecuarias (INIA) agree to establish collaboration in agricultural research and Extension. The main goals of this agreement are: 1) Develop and maintain joint research collaboration on a number of crops important to both North Dakota and Chile; 2) Enhance genetic development, testing, multiplication, and distribution of improved varieties; and 3) Enhance the capacity of INIA to provide Extension education to Chilean agriculturalists. This agreement will serve as an important bridge for both INIA scientists and NDSU graduate students and faculty.

SPECIFIC ACTIVITIES OUTLINED IN THIS AGREEMENT INCLUDE:

- a. **Develop management strategies for PVY and other viruses of potato.** This project will utilize new technologies as appropriate for enhancing detection, epidemiology, vector movement and tissue culture for detecting, eliminating and managing virus spread. The team will include Gary Secor (NDSU) and Ivette Acuna, Manuel Munoz, Sandra Orena, Patricia Catalan, and Julio Kalazich (INIA), as well as collaborators from other agencies.
- b. **Enhance the testing, multiplication, and distribution of improved varieties.** INIA has expressed an interest in identifying improved methodologies to test, multiply, and distribute seed, including new opportunities in marketing. NDSU is a model of seed development and distribution and has developed considerable experience in developing unique marketing agreements with industry to enhance revenue, and to ensure that improved genetic materials are utilized by farmers in the region. NDSU is willing to share information and experience in seed distribution with INIA to enhance utilization of improved varieties. The Seed Technology Team at NDSU, including Foundation Seedstocks, is willing to work closely with INIA and affiliated agencies for enhancing and developing methodology in seed handling, clean seed production, seed certification and seed marketing of existing and new varieties developed by INIA. The team will include Enrique Stange and Carlos Fernandez from INIA and Dale Williams and Gonzalo Rojas from NDSU.
- c. **Germplasm Exchange.** NDSU and INIA agree to provide experimental lines and/or released varieties of the following crops but not limited to, potato, bread wheat, durum wheat, oats, barley, canola, dry bean, lentils, peas, and other crops that may be

identified for testing and evaluation in their respective regions. Both institutions will carry out testing and evaluation under respective MTA's. Ivan Matus and Fernando Ortega from INIA and Susie Thompson, Richard Horsley, Elias Elias, Juan Osorno, and Kevin McPhee from NDSU will interact on this aspect of the agreement.

d. Enhance the capacity of INIA to provide Extension education to clientele in Chile.

INIA has a desire to increase its capabilities in Extension to improve the impact of these activities, and increase their role as a trainer of trainers who work directly with farmers. Developing an Extension program modeled after the NDSU Extension Service is a long-term goal and one that would improve their success in technology transfer. The NDSU Extension Service will provide assistance in determining the best models to improve Extension programming, led initially by Chris Boerboom from NDSU Extension Service and Francisco Tapia from INIA.

e. Developing improvements in bean virus technology. This area of collaboration will improve technology for identification and epidemiology of bean viruses and screening for host resistance to important bean viruses. Anticipated INIA team includes Monica Madariaga, Juan Pablo Manzur, and Kianyong Tay, INIA and Julie Pasche, NDSU.

f. Collaborate on Precision Agriculture issues. Irrigation, precision agriculture and the use of drones and other similar technologies will be explored for potential cooperation. Stanley Best and Sreekala Bajwa from INIA and NDSU, respectively, will explore this avenue of activity within the MOA.

Ownership of any intellectual property developed within a research collaboration in connection with this Agreement shall be determined in accordance with inventorship. Any innovation(s) developed by either university/institute prior to entering this Agreement shall be owned by said university/institute.

II. FACULTY PARTICIPATION

a. Faculty members from NDSU and scientists from INIA will work collaboratively on projects under the framework of this agreement.

b. NDSU faculty and graduate students will travel to INIA to carry out joint research projects and will bear the cost of carrying out this travel using appropriate funds. Similarly, INIA scientists will travel to NDSU for additional training (as needed or requested) and to carry out research in NDSU laboratories and field trials. INIA scientists may become adjunct members of participating departments. To apply for adjunct status at NDSU, INIA scientists will state their interest, in writing, to the head of the NDSU Department involved, and submit a current copy of their curriculum vitae.

Adjunct status will be reviewed by the Head of Department, the Dean of the academic college, and approved by the Provost.

III. PROJECT FUNDING

NDSU will not commit funds for project funding, unless a direct link can be established on the importance of the collaborative work by the NDSU faculty member to North Dakota. If a direct link is established, the Director of the NDAES may allow for expenditure of Other Funds designated for that research project. The Director of Extension will review activities and may authorize Extension Specialists to seek external grant funds to enhance Extension programming by INIA.

IV. DURATION OF AGREEMENT

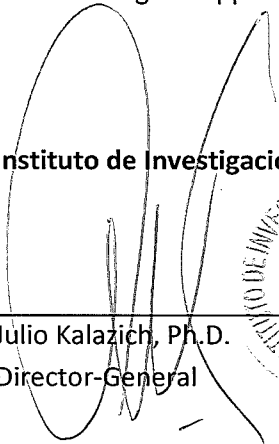
This agreement will be in effect a minimum of **eight (8) years** following the signature by both parties. At the end of the eight years, this agreement will be reviewed and considered for renewal by both parties. The agreement may be modified with the mutual agreement of both parties to deal with issues that arise and are not covered in the initial agreement. This Agreement may be terminated at any time upon six months written notice to the other party of its intent to terminate.

In addition, the Parties wish to resolve efficiently disputes relating to this Agreement. In the event of any dispute or perceived problem, the Parties shall attempt, in good faith, to resolve the problem by negotiation within thirty (30) days. If negotiation is unsuccessful, the Parties shall attempt to settle the dispute by mediation within the next thirty (30) days by mutually agreeing to a mediator. Where resolution is possible, each Party shall be given thirty (30) days from the date of notice from the other Party to correct its performance under this Agreement or otherwise cure any breach of contract. In the event correction or cure is not attainable or reached, then the Agreement shall terminate.

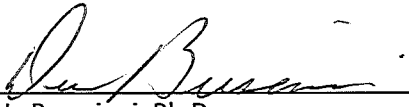
The undersigned approve this agreement on the 15 day of March, 2016.

Instituto de Investigaciones Agropecuarias

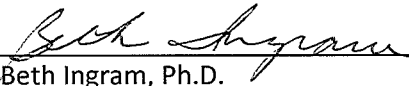
North Dakota State University




Julio Kalazich, Ph.D.
Director-General



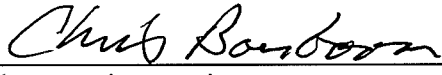
Dean L. Bresciani, Ph.D.
President



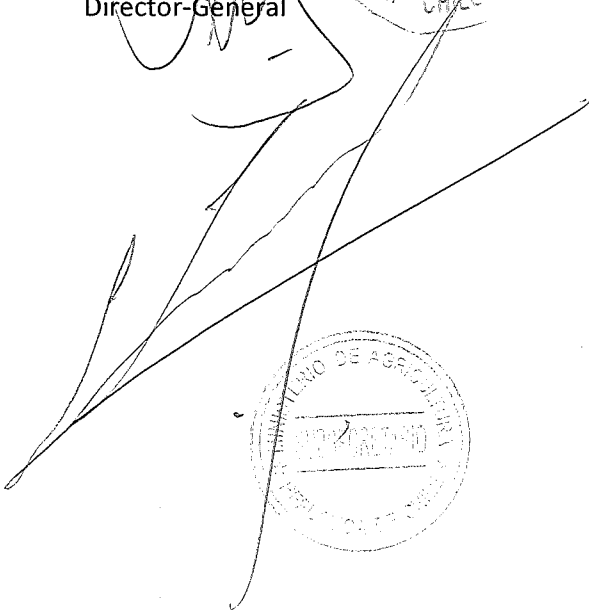
Beth Ingram, Ph.D.
Provost



Ken Grafton, Ph.D.
Vice President, Dean, and Director, Agricultural
Affairs



Chris Boerboom, Ph.D.
Director, NDSU Extension Service



March 14, 2016
Date

March 14, 2016
Date