McCall, Erin

From: owner-ndsu-sbare@listserv.nodak.edu on behalf of 00000f991a64ec7b-dmarc-request@LISTSERV.NODAK.EDU
Sent: Friday, August 18, 2023 5:22 PM
To: ndsu.sbare@ndsu.edu
Subject: Northarvest Bean Growers Association (North Dakota State Board of Agricultural Research & Education) SBARE Board of Directors

Follow Up Flag: Follow up
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Dear SBARE Board of Directors,

My name is Mitch Coulter. I am the Executive Director for the Northarvest Bean Growers Association. In 2023, we represent 63% of the total planted Dry Bean acreage for the United States. We are very proud of that fact and NDSU research is a big reason why North Dakota/Minnesota is the leader in dry bean production. I reached out to our researchers to better understand their needs. They gave me very detailed responses and I did not want to mince their words, so I am including their responses in this email to the SBARE Board.

We are a smaller commodity association so the needs outlined by the researchers does an excellent job of characterizing the additional resources from the state of North Dakota that would help to grow the commodities footprint. I have left identities of the researchers anonymous. I will mention some common themes that you can see for yourself. Equipment needs are top of the list. Some major support from the State of North Dakota for the researchers to access updated equipment will help them generate industry standard research results. The second theme is people power. Funding to provide grad students and proper work support. We understand everyone is suffering with a short workforce, but proper pay scale to draw talent to NDSU research teams is needed from the state of North Dakota. If you have any questions, please let me know.

Sincerely,

Mitch Coulter
Northarvest Bean Growers Association
Executive Director
4844 Rocking Horse Circle S. Suite 2
Fargo, ND 58104
701-365-5103
Email: mitch@northarvestbean.org

Research Need One
Here is a list of things we feel can make a difference and make the research more effective:

1. Additional manpower and growing facility dedicated to speed up dry-bean experiments to find resistant cultivars against plant pathogens like fungi, bacteria, nematodes, etc.
2. Adequate funding and basic benefits like health insurance for the grad/undergrad/extension officials to sustain crisis such as inflation.
3. Networking opportunities, exchange visits with other growers, experts and stakeholders in this region and from around the globe to aid knowledge transfer and problem solving.
4. Development of an automated equipment for extracting and counting the nematodes would highly speed up research related to soybean cyst nematode (SCN) for which dry bean is a good host.

5. A recorded farmer's talk show/podcast with dry bean experts (Plant Pathologists, Breeders, Soil Scientists, Agronomists) every couple weeks or a month where the experts will share their newer findings, management strategies and knowledge. This will also be a platform for the growers to connect with the experts, send their questions and get answers.
6. Regular monitoring and soil sampling in the SCN recorded and adjacent regions to track the population status.
7. Hands-on learning: Provide students with practical experiences on working farms, giving them exposure to real-world challenges and solutions.
8. Industry partnerships: Collaborate with dry bean industry stakeholders to offer internships, mentorship, and networking opportunities for students.
9. Promotion campaign for dry beans through agro-tourism. Establishment of a dry-bean themed gene bank (A bean house/museum) which will collect dry bean germplasms from around the world, showcase dry bean history, plan summer activities related to dry bean cultivation and cuisines preparation as part of public-stakeholder participation to promote dry-bean consumption and cultivation.
10. More research on product diversification of dry beans to make the crop palatable to wider consumer groups.

Research Need Two

Here is my list trying to sort them by priority/need:

1- Plot combine: ~$200,000
2- Other lab and farm equipment: ~$60,000
3- Operational funds (vehicle mileage, greenhouse rental, service fees, winter nurseries): ~$80,000
4- Summer/hourly temporary workers: ~$20,000
5- Research assistant salary: ~90,000
6- Seed Production activities and marketing/promotion of varieties: ~$50,000

Funding any of these items would be helpful and allow more research to be completed for the farming community & industry partners.

Research Need Three

Some operating support for my program has long been deeply needed. I think I'm the only researcher running an applied agronomy or pathology program in the NDSU system who does not have any type of operating support. I have to externally fund all of my staff, the equipment needs for my program, the infrastructure maintenance associated with running my program, and my extension and outreach travel.

The hours that my salaried staff and I have to put in to keep this program running are unsustainable. I often work 80 to 90 hour weeks in the summer, and I rarely work less than 50 to 60 hours/week anytime in the year. My salaried staff (who receive no overtime pay) regularly work 50 to 85 hours/week from the start of planting to the end of harvest.

There are significant expenses beyond labor & basic supplies that must be met in order to run research programs such as mine. The (very old) plot combines my program used for many years had developed such severe mechanical problems that they were beyond the possibility of repair, and we had to purchase a plot combine 2 years ago. We also needed to purchase a heavy-duty tractor last year and build a cultivator due to insufficient available equipment at the station. We had to replace the pump on one of our irrigation wells 2 years ago and have had to replace the electronic control units (VFDs) for one of our wells this year and another well a few years ago. We had to rebuild our plot sprayer and our tractor-mounted, PTO-driven R&D sprayer (the one with the pulse width modulation system) recently. We had to externally generate somewhere around $350,000 or $400,000 for these expenses. Without making these investments, I could not successfully executed this research program.

The only way that I can cover equipment and infrastructure expenses is by conducting studies for companies such as BASF, Bayer, etc. The company asks us to evaluate seed treatments or foliar fungicides for efficacy, and we run the associated field studies, collect the data, and report our findings back to them. The companies provide unrestricted funding, which means that there aren't restrictions on whether the money is used for salaries, equipment, infrastructure maintenance, etc. I have developed an unparalleled reputation for conducting quality research for companies, which has made it possible to generate significant dollars from the companies (they send us lots of work), but these dollars are not free. The funding comes with significant work.

The unbelievable demands on me to generate external dollars has significantly compromised my ability to serve stakeholders and to serve in my capacity as a scientist. My time in the growing season is spent executing research, often with really extreme working hours. It is very common for me to wrap up work at midnight and start again at 6 am. In the winter, I have always prioritized dissemination of results to producers, as I believe that evaluating potential solutions and disseminating findings to stakeholders is the entire reason my position exists. After preparing reports for company-funded and grant-funded research, writing grants, and conducting outreach to stakeholders, there is no time left.

My team and I conduct some of the best, most rigorous, and most impactful applied research anywhere in the world on management of white mold in dry beans and soybeans, Sclerotinia head rot in sunflowers, Aphanomyces and Fusarium root rot in field peas, and Ascochyta blight of chickpeas. Yet, I have not had time to attend a scientific meeting since 2013 and have not had time to publish any of our results academically.

Operating dollars – whether for general expenses or for support staff – make a huge difference. My team of 3 full-time staff and I manage more plots, more acres of studies, and a greater dollar-value of externally funded research than the entirety of the agronomy & soils program, which currently has 8.5 full-time research support staff, 2 research scientists, and 1 extension scientist. My team is just doing what is needed to balance the books and is not accumulating financial cushion.