



The Green Jack

Dakota College at Bottineau Horticulture AND Agriculture Department



105 Simrall Blvd.
Bottineau, ND 58318

WHAT'S NEW THIS FALL, 2021!

The Horticulture and Agriculture Programs Fall 2021

Horticulture

The Fall 2021 semester is well underway here in the DCB Horticulture Program. Our Horticulture program continues to grow when other horticulture programs at North Dakota higher institutions find low and reduced student numbers.

So, what makes Dakota College at Bottineau's Horticulture Program vibrant? According to Keith Knudson, Department Chair of Agriculture and Horticulture, "There are a number of opportunities that make our program attractive. First of all, we get a lot of input from the industry on trends in the latest technology and labor demands. We work with each student with an individual plan that meets their educational needs and where they wish to focus their careers in horticulture. We are very flexible with our horticulture degree providing students with a tailored focus area to fit their needs."

The focus areas currently offered at Dakota College include Greenhouse Technology, Floral Design, Landscaping, Aquaponics & Hydroponics, Specialty Crop Production, and Industrial Hemp Production. Students can receive an AAS degree that provides easy entry to a four-year degree program or they can receive a Certificate and enter the workforce within one year. The certificate program allows for "certificate stacking" which is desirable when students are

currently employed or want certificates on their resumes.

We also have a number of internships for our students that give them additional experience during the production season on-campus and at horticulture related businesses. One of the major organizations partnered with our ECH department is the International Peace Garden. Their horticulturalists provide onsite instruction during the school year and students are able to work onsite during the summer to broaden their career focused experience.

Students are provided with real world experiences, as mentioned above, because Dakota College at Bottineau's Entrepreneurial Center for Horticulture is run like a business. Students have the opportunity to oversee projects, work with ECH customers, and make business decisions.

Our program continues to add online classes accommodating our off-campus students who may have fulltime jobs along with students in high school participating in a dual credit program. Dakota College at Bottineau's Horticulture Program is truly an experience of a lifetime for anyone who wants to pursue a career in Horticulture!

Ag Management and Technology

Fall 2021 was the beginning of the third year

FOR MORE INFORMATION ABOUT
DCB HORTICULTURE AND

Horticulture Instructor/Advisor

Keith Knudson
keith.knudson@dakotacollege.edu
701-228-489

Agriculture Instructor/Advisor

Dr. Linda Burbidge
linda.burbidge@dakotacollege.edu
701-228-5443

for our Agriculture Management and Technology Program. I am pleased to report that we once again increased our enrollment with a final head count of 10 new incoming Freshman; last Fall we added only 6 students. There are currently 18 total students in our programs. The most exciting part is that our retention rate is 100%. A majority of our students are working towards their Associate of Applied Science degree. Course offerings stayed the same this year, but we are switching things a bit. Our Introduction to Agribusiness management course is now going to be offered in the Spring instead of the fall. This will give us the opportunity to use a bit of class time to work on resumes and prepare students to take internships in the summer.

Last Spring, we had our first 2 graduates receive their diploma's. Nicholas Vercaigne of Melita, MB and Alex Hoffert of Rugby, ND both finished up their degrees. A majority of our returning students are positioned well for

graduation and some are also considering transferring to other colleges to complete 4-year degrees. There are 6 students from rural Manitoba and 12 students from North Central North Dakota with several from the Bottineau Area.

Our Current group of students are very active on campus and involved in agriculture. Currently, our students are looking into starting an Ag club on campus. They would like to organize field trips to visit different Ag shows, agribusiness, and farms in the area to help further their understanding of Agriculture and become knowledgeable about different career opportunities in the industry.

Small Unmanned Aircraft Systems Takes Off at DCB



Our small, unmanned aircraft systems (sUAS), or drone classes are really “taking off” this year. We have students enrolled in these classes from four different program/majors. Word is getting out around campus that we are expanding our drone fleet. Last spring, we were able to purchase a fixed wing drone with PAT NOW community grant funds. Students really enjoy the opportunity to get to fly a fixed wing drone. The experience is quite different from a rotary wing aircraft and they also fly faster!

We have enjoyed beautiful fall weather for flying as well. This has given our basic flight training class lots of opportunities to practice outdoors. They are becoming very skilled flyers. In addition, we’ve had several opportunities for flight missions both on- and off-campus. We took photos of the new dining center construction on campus, the ECH fall field day, and took photos and videos at one of the fall baseball scrimmages. Many of our off-campus projects consist of aerial farmstead photos. We were also able to take a quick field trip to Mystical Horizons and capture some beautiful fall colors.

Farmer’s Market Promotional Program



Beginning in 2019, through a grant received from the United States Department of Agriculture, Dakota College at Bottineau initiated a strategic plan to identify the needs of Farmer’s Markets here in North Dakota.

The main objectives of this program included a thorough assessment of the markets as they were at the time. Upon gathering and reviewing this information, it was determined that market manager training was being overlooked.

In response, Dakota College at Bottineau created a Market Manager Training course in partnership with the North Dakota Farmer’s Market and Grower’s Association. Additionally, in an effort to gather more information and offer an educational opportunity, an internship program was created through a partnership with FARRMS.

Over the past three seasons, these interns were placed at markets across the state and aided in the weekly operations of their host market. FARRMS developed learning modules for the interns to complete throughout the course of the program. In reflection, as we sort through all of the data collected and field testimonies of the stakeholders all across the region, it is clear Dakota College at Bottineau’s FMPP have substantially increased North Dakota’s Farmer’s Market capacity in both sales of goods and available resources for all participants.

This winter, under the direction of Quinn Renfandt, DCB will conclude the grant activities by disseminating the information gathered through regional events, hosted in person and virtually. Handing off the resources to those who need it most and bringing together people to gain even more insight into their current challenges. After which a full report will be generated to have available as a starting point for future initiatives. Thus fulfilling a mission to create

a sustainable ecosystem that will continue well beyond the program’s completion.

TO REQUEST THE DAKOTA COLLEGE AT BOTTINEAU FARMERS MARKET MINI MARKETING TOOLKIT OR HAVE ANY QUESTIONS, PLEASE CONTACT:

Quinn Renfandt
Horticulture Technician
quinn.renfandt@dakotacollege.edu

Practicum Students Assist With Project At The International Peace Gardens



Pictured left to right: Joshua Goodman, Chelsea Woodbeck, Jess McInnes & Eric Hildebrand

The International Peace Gardens has been working on building a “natural play park” that is focused on different animals native to the Turtle Mountain Area. Students who are enrolled in the Fall Horticulture Practicum class have been assisting IPG in building and maintaining this new area. Eric Hildebrand states that they “did a lot of planting of shrubs, grasses and plants around the new natural playground that they are building”. This playground consists of a “turtle zone with a slide and climbing structures, a wolf zone which is a teaching circle with rock walls, a muskrat and beaver zone and the eagle zone where we planted a lot of native grasses and some shrubs” states Jess McInnes.

The students have been learning about different plants, grasses, and shrubs in class so one of their tasks was to point out those plants in their natural habitat. During their time at the IPG, they had to learn about landscaping practices such as separating large clumps of a plant, transplanting into different kinds of soil, using landscaping fabric, and mulching practices.

The students were asked what the most interesting or surprising thing they learned and it was digging out cattails! Jess states that “transplanting the cattails was

something I never thought I would have the chance to do. It was really fun and interesting taking them from one location or ecosystem habitat to establish a new one elsewhere” and Eric states that “it was interesting how matted the roots were and how they were connected and hard to get out”. Another fascinating piece of information was the price tag of the renovations they were doing. According to Joshua Goodman, “they are expanding their main facility by five times its capacity and making an educational and sensory area. They didn’t give us an exact number but from what I am guessing, it was around the \$2 million mark.

Finally, the students were asked how this experience will help them in their future plans after college. For Eric, he said that “it helped with learning what plants and shrubs to select for certain growing locations, spacings and overall appeal for people to see”. For Jess, she never thought she would be interested in the landscaping side of horticulture and it definitely sparked her interest in building perennial ecosystems. “I want to go into food service so I am planning on my horticulture focus to be on food to table and learn how to bring food from outside my household to inside my home”. For Josh, he was able to find tips and tricks “that I will be able to apply to specialty crops. A lot of the methods that they are using could be applied to specialty crops, such as splitting plants in order for them to keep growing”.



Student Testimonials

Here at Dakota College at Bottineau, we have two students who are completing their third year and receiving a second degree and we also have one alumni graduate who is working for Dakota College. All three of these students were asked similar questions so they could hopefully inspire other potential students to attend DCB for their Horticulture or Agriculture degrees.

Nic Vercaigne is in his third year at Dakota College at Bottineau and is working on his AS Ag Transfer degree. He graduated in 2021 with his AAS in Ag Management. Originally from Melita, Manitoba Canada, Nic chose DCB over other schools because it was close to home and he was able to play hockey while working on completing his degrees. When asked why he decided on Agriculture for his degree choice his response was because “I come from a farm and the ag industry is quite promising and there is a lot of opportunity where I am from”. Many students don’t have a “set in stone” plan for after college but according to Nic, “all instructors have been very supportive since I’ve been here and Linda has been a great advisor and showed me the different paths I can take with my degrees whether that is going into the workforce or going to another school”. Nic’s plan for after graduation is essentially to return to the family farm.

Joshua Goodman, from Poway, California is also in his third year at Dakota College at Bottineau. He currently has his AAS in Aquaponics (graduated in 2021) and is working on finishing up his AAS in Horticulture with a concentration on Specialty Crop Production, which he will graduate with in spring 2022. There are not very many schools that offer an aquaponics degree, so DCB was instantly in the running. In order to promote success, the instructors “gave me hands-on opportunities to use the skills I learned in class and practicum rather than just making me repeat things word for word. I was given plenty of time to do things rather than just memorize from a textbook”. Eventually wanting to start up his own greenhouse business, Josh states “I wouldn’t be where I am without DCB. Before I came here, I was looking at the world as a chaotic mess and now I can see a path through that mess and how I can contribute to helping”.

Gourav Kumar, from Bangalore, India, graduated from Dakota College at Bottineau in 2021 with his AAS in Aquaponics and his AAS in Industrial Hemp Production. Currently, he is employed as a Specialty Crop

Technician at DCB. For Gourav, DCB was the optimal school of choice. “It was a small college where the financial burden was less. At the same time, it had more practicum than theory. There were more opportunities to engage with the local community members and farmers than compared to other colleges, especially considering North Dakota is an Ag dominant state. The relationship I had with my advisor was very important to me as well because he guided me on where I could go and what I could do”. Gourav’s goal is to be a Marijuana Inspector and DCB helped him become proactive in understanding different situations. My advisor made “me challenge myself and pushed my limits further each and every day. There were times where I surprised myself when he challenged me so it was a win-win for both of us”.

All three individuals say that their experience at DCB was fast paced, chaotic at times and helped them keep an open mind. They all also dealt with the COVID Pandemic, which kept them away from their families for extended periods of time. They were able to deal with fears and struggles head-on thanks to the guidance of their advisors and the relationships they formed at Dakota College at Bottineau.

What’s New on the DCB Farm?

Specialty Crop Block Grant - Composting



Garden soils can become depleted over time. Compost is an ideal addition to maintaining a healthy sustainable garden. Compost provides the soil with organic matter that helps improve soil structure and water holding ability, nutrients, microbes, and microbe food. Composting is the decomposition of organic residues.

At Dakota College, through the Entrepreneurial Center for Horticulture, we maintain demonstration vegetable gardens. As a part of being a demonstration farm, we try a variety of gardening techniques that small scale vegetable producers may want to implement on their own operations. One element that we had been missing on campus were facilities and tools to demonstrate proper composting techniques and utilization of compost on our campus gardens. In late fall of 2020, Dakota College at Bottineau received a grant through the North Dakota Department of Agriculture's Specialty Crop Block Grant Program for composting. We will be able to incorporate these practices into our Horticulture and Hemp curriculums and give our students a chance to get some hands-on experience with composting. The grant entails installation of concrete blocks to create six separate composting bays, equipment to help with building and maintain compost piles, moisture and temperature monitoring equipment, and composting ingredients. We are currently purchasing nutrient and nitrogen rich ingredients and mixing those with carbon heavy sources of biomass that we already have on campus.

When moisture levels, aeration, nitrogen, and carbon ratios are correct, the pile should exceed 131 degrees. It's important that compost reaches high enough temperatures to kill off any pathogens and weed seeds. We also

college vegetable scraps and other approved waste from our campus dining center daily and use these in our compost as a nitrogen source. The finished compost will start to be used during the summer of 2022.

A Horticulture Field Day was held on September 24th where we held a breakout session specifically on composting. We plan to hold another similar event sometime in 2022, so stay tuned!

Community Orchard

Dakota College received the Community Orchard and Garden Project Grant through the North Dakota Department of Agriculture. The project began with the removal of existing trees. A lot of what was removed were the invasive species Buckthorn, as well as Green Ash, which are at high risk of being killed off by Emerald Ash Borer in the future. The project is a part of a larger agro-forestry plan on the Dakota College at Bottineau campus that will provide fruit, peace, and tranquility, and educate students and our community on unique tree and shrub species and cultivars.

The trees and shrubs may take several years to start producing heavily, but when they do, the fruit will be made available to the community members for fresh picking. We hope to get some of the fruits into our campus dining center and Bottineau Public School for students to sample, as well as the local food pantry. Several of the fruits planned for these spaces are uncommon, so community members can learn more about these underutilized fruits.



A total of ninety-seven plants were planted, which is a little bit of everything! For the trees we have four varieties of apricots, mulberries, seven varieties of apples, and four varieties of plums. For the shrubs we have two varieties of juneberries, highbush cranberries, a golden chokecherry, four varieties of currants, two varieties of Aronia (chokeberry), four varieties of honeyberries, Nanking Cherries, and American Hazelnuts.

We will be incorporating orchard care and maintenance into our practicum classes during the school year, so our students can get a hands-on learning experience. It's been a big transformation and a great addition to the campus and our community.

We hope the Community Orchard Project will be used to raise awareness and the importance of fruit production in our region. DCB is also participating in the Tree Campus USA program through the Arbor Day Foundation and the Orchard Project will provide support towards fulfilling DCB's mission of maintaining a Tree Campus and making the campus cleaner and greener.



Pumpkins In The Park

The Entrepreneurial Center for Horticulture (ECH) at Dakota College at Bottineau (DCB) has had another bountiful harvest this year! In 2020, the COVID pandemic cancelled many events but the ECH Department hosted Pumpkins In The Park as a fun event for the kids in our community to enjoy while still following social distancing guidelines. It was such a hit last year that we have decided to host it again this year! There will be around 1,000 mini pumpkins hidden throughout Forestry Park. That is more than double the amount we had last year! ECH Staff, Horticulture students, and other volunteers helped with hiding the mini pumpkins.

Pumpkins In The Park is geared to kids who are in the 5th grade or younger and ran from Wednesday, October 27th to Sunday, October 31st. There were five silver pumpkins and five gold pumpkins that the kids could redeem for a special prize of miscellaneous DCB merchandise and Halloween items! There was a limit to one pumpkin per child per day.

I'm a little pumpkin picked ripe from the vine in need of a home, please say you'll be mine. They've hid me in Forestry Park; it's hide and seek time! Oh where shall you look? Just follow the rhyme. Some are in flowers and leaves in Forestry Park and hidden under the trees. If a pumpkin is orange, it's yours to keep. But if it is silver or gold, a REWARD you will reap! So good luck to you to explore and roam. Most important of all, give a pumpkin a home!



FOR MORE INFORMATION ABOUT
VISITING OR VOLUNTEERING AT THE
DCB GREENHOUSE AND FARM

Apryl Mawby
DCB Farm and Greenhouse Manager
701-550-1564
apryl.mawby@dakotacollege.edu