One of the most important reasons for conducting research at a land grant university is to answer the questions that are coming in from the community around you.

Today on Across the Fence, we'll learn about Vermont-based research that directly helps Vermonters. From farm fields -- to fuels -- to the food we eat, research helps solve real-world problems and gives rise to economic growth. Good afternoon ... and thanks for joining us ... I'm Judy Simpson. 2012 marks the 150th anniversary of the federal Land Grant College Act. It’s often called the Morrill Act after its creator, Vermont Senator Justin Morrill.

In 1862 President Abraham Lincoln signed the Morrill Act into law. It established a national system of State colleges and universities.

Above all, Morrill believed in education that was practical and applicable – and available to all Americans. Today, land grant research at the University of Vermont carries out Morrill’s vision, as we learn in this report from Across the Fence’s Keith Silva:

Vermont wheat is growing at a rapid rate. For many, bread made from Vermont-grown grain is considered the ‘last piece of the pie’ when it comes to locally-grown food. Randy George/Red Hen Baking: “If you were standing here five years ago and you asked me, do you think there’s ever going to be a time when you can make 100% Vermont I would have given you a whole list of reasons why that’s next to impossible so it’s really remarkable that we're in this position.”

The rise in organic wheat production is nothing short of an agricultural revolution. Consumer demand coupled with the combined efforts of farmers, bakers, and researchers have doubled the amount of organic wheat produced in Vermont in the last five years. The cradle of Vermont-grown organic wheat can be found in Bridport at Gleason Grains. Ben Gleason//Gleason Grains: “When I moved here, there was, as far as I know, there was no one else who was growing wheat and milling it into flour. I was the one in 1981 I was the only one who was doing it on a commercial scale.”
Gleason grows varieties of soft white wheat used in pastries and hard red winter wheat which is used to make bread. As a pioneer in field of locally-grown wheat ... Gleason has a unique perspective on where wheat production is headed in Vermont.

Gleason: “I mean, there’s so much interest in it it’s really changed a lot and there are people that want to grow it in their backyards and there are people that want to grow it and be, do what I’m doing and there are people that want to really want to have big operations so anyway, we’re going to see in the next 20 years what happens.”

Gleason invited grain growers to his farm for a workshop to learn from his experience and to see what innovations he uses to grow his wheat. Co-hosting the event was University of Vermont Extension agronomist, Heather Darby.

Heather Darby//UVM Extension: “For about 7 years we’ve been working with grain growers on growing grain and when I first started working with grain growers it seemed like the most important thing to us was yield, we thought about that a lot, that was something we always measured in our trials and we never really measured any other quality parameters and then there was this real localvore food movement that started and at that point we started to hear from consumers and bakers and processors more about what they wanted to see in baking wheat. And that’s when we really tuned in on parameters such as protein and bread protein is one of the limitations of producing good quality wheat in the northeast and in Vermont in general; meaning that we have too low of protein in our wheat in this area especially in winter wheat.

The higher protein levels in the wheat, the better gluten strength which means a better loaf of bread. Mills and bakeries prize wheat flour that has between 12 and 14% protein. Vermont-grown wheat has typically fallen slightly below this desired threshold.

Gleason: “I’m growing mostly winter wheats; winter wheats will be lower in protein, but the one I’m growing now which is called redeemer is the highest protein of the winter wheats we’ve tried and the bakers really like the quality of it.”

One way to increase protein levels is to apply nitrogen as a fertilizer at different growth stages of the wheat’s lifecycle. A year ago, Darby and Gleason began working together testing different types of organic fertilizers and experimenting with the timing of the application. The project is funded by a grant from the United States Department of Agriculture’s competitive grants program, SARE, the sustainable agriculture research and education program.

Keith: “Deb, how many SARE-funded projects are there in Vermont? Deb: “There are about 12 being conducted right now”

Debra Heleba is the SARE coordinator in Vermont. SARE funds about 3 million dollars in grant-funded projects throughout the northeast each year.

Debra Heleba//Vermont SARE Coordinator: “Our grant programs range from our mini-grants [...] those are grants that fund projects up to 15 thousand dollars and those are typically just a year-long project to our bigger grants our research and education grants and our professional development grants can be six figures up to like 300 thousand dollars for multiple years of project work.
The research taking place at Gleason Grains is funded by a SARE partnership grant in which the farmer and the researcher work together to develop innovative strategies to solve on-farm issues.

Heleba: “it’s a unique part of SARE in that all of the projects are coming from problems that farmers are having right now and trying to find solutions to those challenges.

Darby: “one of the most important reasons for conducting research at a land grant university is really to answer the questions that are coming in from the community around you. And the reason we’re doing this work in the first place is because of the farmers and the end users saying, ‘look, we want to improve the quality of our agricultural product so that we can have better markets become more viable and the end users are happy as well. So, who’s going to figure that out? You know? Is it the farmer’s role to figure that out? Is it the universities role to figure that out? Is it the end user’s role and from my perspective and also from SARE's perspective it’s all of our roles and that’s why they have these partnership grants so that we can work in partnership with all the stakeholders: the farmers, the end users, and the researchers to answer the pertinent questions that are coming out of our communities.

This research project is now in its second year and so far the results are encouraging.

Erica Cummings//UVM Extension: “We did find that there was an increase in protein and yield”

Erica Cummings works with Darby as a crop and soils technician. She applied three different types of organic fertilizer directly to the wheat using a practice called top-dressing. Once the wheat was harvested, it was tested and analyzed at the Vermont crop and soils lab at the University of Vermont.

Cummings: “we had three amendments that we used, Chilean nitrate, pro-booster, and composted chicken manure and we applied at 20 pounds of available nitrogen per acre to each of the plots ... we can tell you that the pro-booster had the biggest increase in protein, here again, it’s one year of data. I think that’s why we want to get a second year's worth of research at it before we start recommending it to farmers because it is an expense especially for Chilean nitrate and actually for any of the amendments. So we want to make sure that’s why we reapplied for the SARE grant to do a second year worth of trials just so we can be more confident when we say, ‘this is what we found.’ I mean the weather changes so much from year to year too and we just want to have another year’s worth of data under our belt before we start doing any kind of recommendations.”

The farmers attending this workshop are eager to learn how they can apply the research being done by Darby and her team on their own farms.

John Mellquist //Cedar Circle Farm – East Thetford, VT: “We’re in a tough place to grow grains, but it’s possible. We’ve got to find better varieties that will do better in our damp climate here, for example rye bread, but with wheat breads, it’s challenging and we just need more research while we can get it done [...] and we’re having some success after only five years so it’s great!

Gene L’Etoile//Four Star Farms – Northfield, MA: “Coming up to learn as much as we can about grain we’re growing grains in Mass, only been doing it for 3 or 4 years and there’s a lot more experience here. I knew there would be people here that knew what they were
talking about and there’s always different people here you can learn from. UVM started it and nobody else is doing it right now so if we want to know what going on, we go through UVM.”

For Darby and Gleason, the key to this project is education through cooperation.

Darby: “Building a relationship with farmers that are willing to help answer these questions is really important because there’s no better place to conduct research than on an actual farm in the state that you’re working in. It’s in there conditions, on their soil types, it’s difficult, it’s time consuming, and it takes resources to do it and so to be able to work with a farmer like Ben Gleason that’s willing and interested in helping to answer those questions is just the kind of partnership that we look for at the university because we couldn’t do it without them. Farmers like that don’t come along too often because it is extra work and commitment so he’s a very valuable partner to us.

Gleason: “The relationship has been wonderful just working with Heather and UVM because heather is, she’s just so interested in what we’re doing and is taking ideas and just trying them out and this is why the research is so important is that we’re going to get answers from it and we all contribute, all of us farmers.”

From humble beginnings, Gleason has grown his grain business over time ... as for what comes next, Gleason is optimistic.

Yeah, I think we have come a long way ... up until this year the most I ever sold was 35 tons, I’ve already sold 50 tons this year so there’s a lot more people out there who are interested and I think that doing programs like this people get interested and they get to know their farmers and they say, ‘maybe I should try some of this’ so there’s a lot that’s going on that wasn’t going on when I was first here.

At Gleason Grains it’s the work of farmers and researchers that will determine the future of Vermont’s grain industry ... put another way, it’s this kind of collaboration that’s bound to ‘grant’ success. In Bridport, I’m Keith Silva with Across the Fence.

The deadlines are approaching for the 2012 Northeast Sustainable Agriculture Research Education grants, and the contact information is on your screen.

The deadline to apply for a Sustainable Community grant is October 19th.

The Partnership grant applications are due on November 1st. And the deadline for Farmer grant applications is December 1st.

To get more information, or to apply on-line, go to the Northeast SARE web site. The address is “nesare.org”.

You can also get more information by calling Vermont SARE Coordinator Debra Heleba at 802-656-0471. If you prefer, you can e-mail Debra. Her e-mail address is: Debra dot Heleba at U-V-M dot E-D-U.

With foliage season approaching full color we thought we would take a moment to take in the sights ... from early morning frost to sun-dappled reds, oranges, and yellows ... reminders that fall is in season:
Just beautiful.

That’s our program for today. Thanks for joining us ... I’m Judy Simpson ... I’ll see you again next time on Across the Fence.

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