Learning on the Ground: Seeing Agriculture Through the Eyes of Farmers

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It's a Thursday morning in September, still dark, and it's pouring rain. Twenty-three Dordt College agriculture students are huddled in a small, three-sided shed near Freeman, South Dakota, their backs to the wind. Behind them, stretching south, is pasture and fence line and a wide dark sky.

In the shadows, students are perched unevenly on bales of alfalfa, their eyes on the farmer standing in the center of the group. He shouts over the sound of rain on the metal roof, and the students strain forward to hear. They scribble in damp notebooks. The air is heavy with the scent of hay and growing things and distant animals.

For students in Dr. Jeremy Hummel's agriculture courses, learning this way—on the ground, in the field—is something they've come to expect. Encounters like this one—even huddled in a dark shed, straining to hear over the rain and wind—are built into Hummel's courses. They are intended to put students on a farm, in front of a farmer. Students ask questions, and in the farmers' answers, they look for the how and why of their operations.

Over the course of the day, students in Hummel's Agroecology course visit a farm...
with pastured bison, a small raw-milk dairy, a four-acre hops operation, and a vineyard. Hummel says it’s easy to ask how questions. How many acres? How many head? How do supply chains work? How do you keep pace with shifting markets?

The why questions are harder.

“I always tell students to listen carefully to what the farmer says near the end of a tour, when I mention we’re about to wrap up,” Hummel says. As if on cue, the farmers will often begin speaking directly to their deepest values and commitments—the why of what they do and how they do it.

“There’s no one-size-fits-all model for farming,” Hummel says. “When my students leave Dordt, they’re all going to different enterprises and to different corners of the continent and the world. So, for me to suggest that one model of agriculture is the right one—that’s ultimately going to fail them when they get out into the real world.”

Instead, Hummel tries to model “an honest, open questioning of things” for his students.

Hummel’s Agroecology students typically come in with a solid foundation of coursework in the plant sciences, animal sciences, or agribusiness. They’ve studied markets and supply chains, waste disposal strategies, water-quality issues, and agricultural technologies. Many are well versed in the various dimensions of state and federal ag policy. Many aren’t as familiar with operations that don’t fit the regional mold. But these kinds of farms are around.

One of the farms making a different model work in the Freeman area is run by Tim Eisenbeis. Eisenbeis runs a small dairy that was certified organic over 10 years ago, before it became a growing trend in the Midwest. His small herd is grass-fed, and the milk is never heated for pasteurization, which was recently made legal in South Dakota. Eisenbeis spent 11 years in Brazil, doing agricultural development work with the

ECOLOGICALLY THINKING

The four producers Dordt students visited on the tour fit into a trend of young farmers who want to farm differently. Hummel’s Agroecology course helps students understand how that trend fits into the bigger picture of North American agriculture—a picture as varied and diverse as the climates and plant and animal species the sprawling continent hosts. But thinking ecologically about agriculture isn’t just for small producers or alternative approaches, says Hummel. It can benefit any kind of operation, of any size, helping farmers to steward the resources God has entrusted to our cultivation and care.
Mennonite Central Committee, then came back to South Dakota years ago to farm alongside his father.

His daughter-in-law, Lillie (Koerner) Eisenbeis, graduated from the Dordt agriculture program in 2015, and she and her husband, Andre, often pitch in with the farm work. They hope to stay in South Dakota and eventually start their own small farm, in keeping with a trend of young families returning to the area to farm after attending college or living in cities. Many of them are farming in ways that look different than the region’s agriculture has looked in the past.

"For young people, alternative forms of farming can be an easier start-up. If you’re doing something different, you can ease your way into it, get a new corner on the market," she says. "It’s a way of bringing young people back to the community."

That’s the guiding philosophy of the Rural Revival Movement, an ecumenical partnership of farmers and churches that the Eisenbeises have been involved with for several years. Lillie says having enough families on the land is crucial if small, rural communities are going to flourish, she says.

Hummel’s Agroecology students had a chance to ask the Eisenbeises how and why questions as they led them on a tour of the small farm.

TURNING BACK TO LOOK FORWARD

It’s late morning, same Thursday, and the sky is threatening rain again. Wearing trash bags and rain jackets, the group of ag students gathers around Eisenbeis in the wet pasture, the grasses knee-deep in some places. They’re surrounded by Jersey cows, munching on the variety of plant species that make up the bulk of their diet. Many in the herd are standing next to their calves, who nurse at will.

"As a farmer, I try to stick as close as I can to natural cycles as I observe them," Eisenbeis says. Stopping to reflect a moment, he adds, "I mean, I tangle with them. I’m a farmer. But God created the world, and God said it was good. I think we can learn from creation, and from how things work together."

Eisenbeis keeps cattle at pasture or, come winter, feeds them fresh green fodder, which he produces by sprouting barley in hydroponic trays in one of his outbuildings. He spends two hours working in the outbuilding every day. It’s time-intensive and grueling, but there’s joy in it. Eisenbeis sells his milk directly to consumers, raw, in bottles they wash and re-use. He knows most of his customers by name.

"Tim has such a humility about him, and the Lord has clearly blessed what he’s trying to do," says senior Kelsey Lewis, an ag business major. She grew up on a hobby farm in northern Michigan, where her family raises a small herd of pastured cows and grows alfalfa for feed. "He’s out in the middle of nowhere, and he’s able to sustain a livelihood by selling raw milk to hundreds of local people. It takes a lot of people to believe in what you’re doing to make a living that way. It’s quite impressive."

Later in the tour, Eisenbeis holds a milk bottle up to the light in the small outbuilding where the milk from his herd of around 40 is handled and stored. Eisenbeis has around 270 customers, most living nearby, who either bring their bottles to the dairy to be re-filled or have milk delivered to their homes. While some people worry about the safety of raw milk, Eisenbeis has never had a report of a customer becoming ill. He tests the milk regularly for harmful bacteria, and the scale of the operation helps him tightly control the way the milk is handled.

Eisenbeis turns the bottle in his hand and talks to the group of students gathered near a large, stainless steel bulk tank. Others are crowded into dusty corners.
It's a small operation—there are odds and ends collected on shelves and countertops. The air smells sweet and milky and slightly pungent. He tells the story of one of his customers—an old man with failing eyesight who does his best to scrub his milk bottles so they can be re-filled.

“We just wash them again,” Eiesenbeis says, smiling. The dairyer often receives handwritten notes of thanks from his customers, some of whom are senior citizens who remember drinking raw milk in childhood. Others are young families, drawn by claims of the health benefits of unpasteurized milk from pastured cows, including its potential for being better tolerated in children with some dairy allergies.

Reflecting on the tour, senior ag business major Andrew Koetsier says, “Tim's story about the elderly man whose milk bottles he washed shows how much enjoyment he gets out of what he's doing. It's a very loving way to do agriculture. Whatever you think about grass-fed versus not grass-fed, or pasteurized versus unpasteurized, you can't argue with his joy.”

The group moves to a small milking parlor, and students continue to ask Eiesenbeis questions. It’s raining again, and they must shout. They want to know about his customer base and his rationale for selling raw milk. They're curious to hear more about the safety of an unpasteurized product and about the logistics of making a living with a small herd and 270 customers. The Eisenbeis dairy is, by conventional standards, almost unbelievably small. Some of the students listening come from dairies of 1,000 head or more.

Alex Werkhoven, a junior ag business major, is one of those students. He grew up on a dairy in Monroe, Washington, just an hour’s drive from Seattle. His parents and siblings—two of whom are Dordt graduates—produce pasteurized milk on a large scale. They have more than 1,200 Holsteins and 1,000 acres devoted to growing corn and grass silage, which becomes part of the cattle’s ration and supplements their time at pasture.

“What blew me away about Tim's operation,” says Werkhoven, “is that he's been doing it this way for seven years, and he's making it work.”

For Eisenbeis, farming in the way he wants to farm requires keeping his herd small and devoting much of his day to physical labor. He has no plans to expand. Werkhoven is impressed by Eisenbeis's creativity and drive, but suggests getting smaller isn’t the only way to farm better and smarter.

“I think that’s a mindset a lot of people have right now, and yes, smaller could be better. But smaller doesn’t always mean better.”

— Alex Werkhoven, junior ag business major

Senior ag business major Andrew Koetsier says, “Agriculture is never simple. It involves a ton of different, interdependent things working with each other. On a single farm, you’re trying to assess thousands of interrelationships. And then in Sioux County, for example, you have thousands of different farms interacting with each other. That’s why these questions—about how to farm well—are complicated. When it comes to natural versus synthetic, there’s a balance we have to find. And that’s what agroecology helps us do. It helps us understand how everything fits together.”
His family’s western Washington dairy received national attention several years ago when it received a U.S. Dairy Sustainability Award, recognizing the operation as a model of environmental sustainability in the region. The Werkhovens, working alongside the local Tulalip Tribes and a salmon habitat recovery organization, purchased an anaerobic digester for use on the farm, which is located at the confluence of two rivers, the tribe’s historic fishing area.

“The digester is essentially a giant stomach,” Werkhoven explains. It turns manure and other waste products into methane, which in turn powers a generator that puts electricity onto the grid, where it can be sold.

“We put everything in the digester—cow manure, everything that comes off the farm, every waste product. We also take in waste products from the local slaughter plant and grease traps from area restaurants,” Werkhoven says. The dairy also accepts products and waste from grocery stores and area production plants, including leftover whey from cottage cheese production, flour with insects in it, expired eggs, and leftover brewers grain. Rather than throw them away, the digester recycles them for use as fertilizer.

Werkhoven says he’s excited to return to his family’s dairy at some point, perhaps after going to graduate school or spending time in the field as an agronomist. He thinks experiences like visiting the Eisenbeis farm can help generate ideas for new things to try on his family dairy back home.

“That’s the purpose of tours like these,” says Hummel. “To help students approach the study of agriculture with a new lens.

“In their other courses, they don’t necessarily get a clear picture of how biology and ecology works outside of the agricultural sphere,” he adds, noting that deepening students’ ecological understanding can help them think in creative and restorative ways about the practice of agriculture.

Hummel says it’s not a matter of going back to a landscape that predates agriculture, or simply throwing out the research and technologies at our disposal. It’s about looking for dynamic solutions that make good use of the resources and relationships that already exist in nature.

One of the ways we can do that is by taking inspiration from how the world is working—how nature is put together,” Hummel says. Agricultural systems don’t exist in a vacuum, but within a larger web of ecological relationships. It’s important to understand how wildlife and plant communities in a certain ecosystem influence—and are influenced by—a given agricultural operation.

Looking to nature for instruction looks different in different places and different climates, Hummel says. It might mean adding a perennial crop, like alfalfa, into an annual crop rotation of corn or wheat, throwing weeds off balance in early summer, when they typically threaten crop health and require the use of herbicides. It might mean promoting insects that are the natural enemies of pests by increasing plant diversity, and doing so across the landscape to limit chemical insecticide applications.

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Koetsier sees this kind of synergy at work on farms in Northwest Iowa and in his home region of southwestern Ontario, where many farmers have come to recognize the benefits of practices like cover cropping. Adding crops like oil seed radish or oats to a rotation, he says, can help prevent erosion and regenerate biological activity in the soil.
“The amount of cover crops being grown where I come from, as well as here in Sioux County, has been increasing steadily for a long time now. And that’s just one example of a practice farmers are trying to incorporate on their farms,” Koetsier says.

Lewis says the college plays an important role in promoting such farming practices in the region. Aside from ongoing research partnerships with area farmers, she sees Dordt reaching out to farmers near and far through events like the Global Agriculture Summit and by hosting a summer Agroecology course, co-taught by Dordt Environmental Studies Professor Dr. Robert De Haan.

For Lewis, Hummel’s Agroecology course has given her a helpful framework for thinking about the relationship between agriculture and the world God created.

“The environment and agriculture are interdependent—they need each other,” Lewis says. “God created wildlife and plant species for a reason. It’s important to use what’s already there to make our farms better.”

Koetsier agrees, emphasizing that this approach is for farms of any size or kind. But it’s always a balancing act. He’s learned from Hummel that thinking ecologically about agriculture requires making careful choices about when to try a nonsynthetic intervention and when to rely upon agricultural technologies we’ve developed, like chemical fertilizers or herbicides.

HOPS-GROWING: A LESSON IN INFRASTRUCTURE

Koetsier has seen this balancing act first hand. He spent the last two summers interning with an agronomist in Ontario.

“We’d hop in the truck early each morning, fly around to all these different farms, and help the farmers address issues that are going on in their fields,” he says. These farms ran the gamut from hobby farms run by college professors to cash-cropping operations of 5,000 acres or more.

“In my experience, all of those farmers are very aware of the environmental impacts of their farms,” he says. “They aren’t just mining the soil for a profit—they can’t. The future of their operations depends on healthy soil. But they’re also trying to juggle a lot of different balls at once.”

Soil health is one of them, but there are other to juggle. Koetsier points to one of the tour stops, a four-acre hops operation, as an example of the many, sometimes-competing demands that shape farmers’ choices.

Mark Bonnema is in his 30s, and his hops farm is a side-gig—he works as a nurse full time in Sioux Falls. He runs the operation with the help of a few friends and sells his hops to area breweries eager for local sourcing.

Bonnema’s farm is an unexpected aberration in a landscape of corn and soy. An observer from the road might be surprised to come upon a field with rows of what look like telephone poles, connected at the tops by string. Next to the field sits a weathered barn from the 1920s. On each 15-foot pole, delicate green hops vine their way toward the sky—the vines grow up to seven inches in a day.

“That farmer is farming in an area where the infrastructure has been designed for monocropping systems,” says Koetsier. “So, not only is he facing a steep learning curve—it takes time to learn to grow something different—but there’s also no physical infrastructure to support it. There aren’t any hops dryers in the area. There’s no packaging facility. He’s got to build all that up himself. Also, that’s a huge market he’s working to open up, and that’s going to take a lot of work over the next few years.”

Like all farmers, Bonnema’s choices are shaped, and sometime constrained, by the physical and economic infrastructure that exists in the region and by patterns of consumer demand, decades of ag policy, and the need, ultimately, to turn a profit.

“I think the thing that impressed me most about all the farmers we visited is the fact that they’re surrounded...
by conventional farms, they’re trying something different, and they’re making it work,” says Werkhoven.

RETURNING TO THE OPENING SCENE

Students stand gathered around a farmer in the dark of a shed, mid-downpour, straining to hear. At the center of the group, Nate Preheim tells of leaving a successful career in sales in Colorado for a life on the plains of South Dakota, raising buffalo on rolling pastures filled with clover, bluestem, and vetch. It’s hard work. He and his wife, Jessica, have spent the past year building a fence. The returns are modest, but the couple doesn’t regret leaving Denver.

“I got into farming for the lifestyle,” Nate says. “I was tired of the corporate world and its expectations. I was tired of doing the same thing every day. So, we figured we’d come out here and see if we could make a go of it.”

As he speaks, steam rises from his steel coffee mug. His boots are mud-caked and wet. As a kid, Preheim used to come help his uncle on this farm. He and his wife now rent their 40 acres from his aunts and uncles, who jointly inherited the land. Nate has been building a customer base mostly through cold calls, a technique he learned during his years in sales.

The students in the shed raise their voices above the downpour, posing questions about markets and niche products, start-up capital and soil health. Some put their knowledge of plant science to work, offering suggestions about how Preheim might improve soil health in one of his paddocks. They listen with interest as he details the ins-and-outs of field harvest.

As the shivering students pose questions, the story of the Preheims’ farm takes shape. The couple has been raising bison for two years. The animals live most of their lives at pasture, with minimal intervention from the farmers. Once they reach a certain age and weight, they’re felled by one clean shot from Nate’s 30-06 Springfield. He harvests them one at a time, in a way that’s meant to minimize stress and pain. He learned the technique from members of the Lakota Sioux tribe, who keep a herd near the Rosebud reservation. The Preheims’ operation is among the few in the U.S. practicing field harvest.

Students, speaking in turn, voices raised over the rain, ask Preheim questions:

“Why buffalo?”

“Why did you leave a successful career in sales?”

“Why rotational grazing? Why field harvest?”

For the Preheims, the why comes down to a desire to live and work independently—to have control over their own time, and to minimize their reliance on feedstuffs and agrichemicals produced by large corporations.

Dordt ag majors will need to make their own choices once they leave the classroom.

“If you know Dr. Hummel, you know that spending a day like this is nothing new,” says Koetsier. “This is how he teaches every class. He encourages us to approach agriculture from all angles, in an all-inclusive way. He does that whether we’re inside a classroom or out in the field.”

“Students need to be able to ask questions,” Hummel says, “and then gather the information they need to come up with an answer or solution that honors the people in their communities, the world God created, and the God they’re ultimately responsible to for all the decisions they make. I can’t do that for them, but I can help prepare them to do it.”

ALEISA DORNBIERER-SCHAT

Dordt students gather on the gentle, south-facing slope where the winery’s grapes are grown. They learned about pruning the vines, the importance of even sunlight for ripening grapes, and the differences between viticulture in a dry climate like California and a relatively wet climate like Northwest Iowa.