

AGRICULTURE

Hebda's building brix

Ancient technology produces profitable produce

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FOR THE COURIER

It was one of those lovely fall days. The kind of day that is dreamed of during the hot summer struggle of daily life. It is the kind of day where the layers of clothes started with at day-break end up in a messy pile on your seat. A day where the chills of the night cling to your bones in the early morning shade.

It was on a glorious morning such as this that I went to visit Mr. Dale Hebda, currently propagating and building a growing business at his farm, Hebda Produce. Located in the picturesque Jim River Valley, just a stone's throw northeast of Yankton, Hebda operates on the farm formerly known as the Garrity Orchard.

I sipped a steamy cup of coffee as I entered the compound via a long driveway, lined with evenly-spaced Fir trees, pruned as only an orchard man can. I drove past red-tinned buildings, an old farmhouse, a retail space adorned with exotic pumpkins. Near the center of the property, I reached the main residence: a large home with a black lab trotting with his favorite stick.

Dale Hebda, 56, rolls up in his white cargo van, back from a trip to his retail location at the Yanton Mall. He explains to me how he initially got started in local food production.

BOOMING BEGINNINGS

"Well it kind of all started because I grew up in agriculture and I always liked to garden. Our older children were always in 4H and we were growing vegetables on an acre and half west of Yankton. We started out with fresh produce at the farmer markets."

He continues, "We found that we were processing vegetables at 10 or 11 at night. I thought maybe if you did it for a living, you might not be doing it at that time of the day. But here we are, still working with the produce at that time of the day."

Dale explains that when the Garrity place came up for sale, they had the opportunity to purchase it. Ever since then it's been a foot race to keep up with all the new segments of the business.

Hebda Produce started with fresh vegetables and has since expanded into jams, salsas, sauces, applesauces, apple cider and a variety of other products.

CHANGING CHALLENGES

Of course, the toughest part of running a food production farm is addressing the constant demand for labor.

Hebda tells us, "We have two ladies full time, three part-time employees, and a few volunteers," Hebda continues, "The hardest part of having the employees is self-direction, getting them to the point where they can see two-three steps in advance and take the initiative to do the jobs in the right order at the right time."

Another major challenge Hebda faces is the pattern of increasingly early initial warm-up in spring, followed by a killing frost in late April or early May, which destroys the blossoms on the apple trees. This changing pattern of weather has caused significant failures in the apple crop in 7 of the last 12 years. He is working to identify a strategy to hedge against the risks presented by the early-warming phenomenon.

SWELLING SOIL

Everything comes from soil and everything eventually becomes soil. The invisible life of

soil is the primary focus for Hebda Produce. The methodology for measuring the success of the program is hinged on sugar production and content in the produce. Sugar is expressed and measured in units known as 'brix,' one brix unit equates to one gram of sugar in a 100 gram solution as a percentage of mass. Building brix is at the core of the business.

Brix units are easily and quickly field-tested by extracting the liquid from plant tissue using a small handheld press, and then measuring the solution using a small handheld refractometer to evaluate the refractive index and measure the brix units present in solution. The more brix units that are present in your crops, the better they will taste, the longer they will stay fresh and the less desirable they are to pests.

Hebda explains the roots of his philosophy on soil, "About 9 years ago I got an invitation to go listen to a presentation by SoilWorks LLC, a local company here in Yankton, dealing with how to do things naturally," says Hebda, as

we gaze at his huge hot house brimming with perfect peppers and tangy tomatoes, "If you balance your soil, you increase your sugars, weed pressure will go down and bugs will go away. Through this process you can produce a nutrient-dense product or produce."

Through the SoilWorks program, Hebda has been able to balance the minerals in his soil to create an environment that is ideal for soil microbes. The soil microbes are fed through the incorporation of organic matter into the soil. The more microbiological activity present in the soil, the more nutrients and energy become available for the plants.

Plant nutrition rests on the foundational ability of the plant to mineralize nutrients to yield sugar in the living plant tissue, acting as the carbohydrate engine for plant growth.

NATUROPATHIC PEST CONTROL, ANCIENT TECHNOLOGY

The pivotal moment for Hebda was when he learned that bugs can't digest sugar. Hebda reviews one way he measures the success of his soil program, "What we have seen happen with our vegetables is that there are no [insect] bites, we don't even see as much as a potato bug until the plant dies down. Because there is so much sugar in the vines, leaves and produce, pests will not eat them."

As I'm sure many of our readers in the Freeman area already know, the bugs were bad this year, especially early in the year. Hebda's early season crop was largely unharmed due to the high level of sugar in the plant tissue of his produce. In the event they do have a particularly tough pest, it is addressed by dusting a naturopathic dose of diatomaceous earth over the problem area.

Diatomaceous earth is a finely crushed powder form of fossilized marine algae, known as diatoms. To bugs, this soft powder might as well be an ice storm of broken glass. Hebda explains how the killer crystals work, "Pests have an outside layer of oil which protects them from the elements and from disease. When they crawl across the diatomaceous dust, it slices through the protective oil layer and they are exposed to the environment and quickly die due to infection or dehydration."

To combat the worms and grasshoppers that graze and munch on cabbages, Hebda uses an impossibly simple technology, sugar water. What?! Hebda testifies, "Every three or four days, we would just mix up a big batch of sugar water, and go spray it. That's all we'd use, sugar water."

STORAGE AND MARKETING

Storage is always a big issue for small-scale produce farmers and freshness is key to maintaining highly desirable harvests for delivery to market. Hebda has a large cooler, costing nearly \$1000 a month to keep at a constant temperature of 35-40 degrees. The cooler is big enough to utilize pallets and to house up to five semi loads of product. When Hebda's apple crop is heavy, it will fill this temperature controlled enclosure, allowing him to extend the life of the crop through to March of the following year if necessary, when they make their final press of premium cider.

Hebda markets his products at the Falls Park Market in Sioux Falls, and works with a couple non-profit fundraisers to provide product for their campaigns. He also sells at the Vermillion Farmer Market, at the Yankton Mall and to a handful of wholesale accounts including Breadsmith and Pomegranate Market in Sioux Falls.

WONDERING WHY?

But why would someone leave a successful insurance career to toil laboriously in a less profitable business?

Hebda left a lucrative career in the insurance industry to start Hebda Produce. "I was trying to find a way for our children to learn work ethic; if you instill it young, it is there for a lifetime," Hebda says, "Out of all the industries I've been involved with, this [direct-marketed food production] is the toughest by far to be profitable in."

"The labor investment is so huge, you have to carry the cost of labor, material, storage for up to 8-12 months."

What advice would you give to someone starting out who wanted to do small scale food production and doesn't have a lot of money? Hebda advises, "Start small, keep your overhead low and don't plan on a lot of sleep."

PROLIFERATING PRODUCTION

We stroll past Aronia berry bushes toward a large high tunnel. It's abundantly evident that

these high tunnels were master-planned. The tunnels rest on a rail system allowing the tunnel to be rolled by hand between three growing areas. Frostless hydrants and electrical boxes are strategically placed at each of the three stages. Hebda is able to extend his high tunnel harvest well into November, most years. As other producers' vegetable crops wane in late season, the high tunnel system extends the season, enabling high quality produce to be harvested for many additional weeks and giving him an edge over competitors at the markets.

We walk into the 'hot house' and the abundance of the crop is quickly assessable. Even in late season luscious, immaculate tomatoes hang from heavily laden vines and an eclectic mix of peppers of every shape and variety hang in wait for eager hands to harvest. Fans purr and move air above our heads and neatly arranged trellises reach for the heavens. Each square foot of ground inside the high tunnel produces 2x the harvest of a square foot outside of the tunnel.

As the high tunnel is moved to new ground each year in a three-year rotation, water and electric boxes are waiting. As the resting plots are taken out of primary production, winter greens or cover crops are planted. This incorporates organic material into the soil to feed the microbes. When in cover crop and winter greens, snow and rain push the salts down and out of the idled production plot. Hebda has the ability to scale his high tunnel operation to up to 30 additional tunnels.

While the ambitious dreams of local producers continue to inspire the next generation to consider this labor intensive lifestyle, ultimately the power to make more farms, like Hebda Produce, a reality is with the consumer.

Will the people in our communities choose to save a few dollars a week by selecting nutrient deficient goods trucked in from 1000 miles away, or will they align their values with the reality of what 'voting with your dollars' means? Is saving a few dollars each week worth the cost of shortchanging the futures of our local producers? Are a few bucks a week worth the cost of funneling our grocery money out of the community and into the corporate coffers of a handful of enormous producer conglomerates, the very conglomerates that some say oppress working class people? Of course local, small-scale production will never realize the economy of scale that huge producers operate within, it is simply impossible. Local goods will always be more expensive; please consider the reasons why, and why large-scale goods are so cheap.

In closing, I'd ask that you consider carefully your grocery purchases. If there is a local option, invest in your neighbor and the community by buying it regularly. If there isn't a local option, ask your grocer to carry it, because they will if you buy it. Consumer demand absolutely, undeniably and fundamentally results in what gets stocked at the store.

If you promise to keep the community you love in mind when you buy, we've got a great shot at building a growing future.

Rural Alternatives is a monthly feature facilitated by Rural Revival, a local organization that focuses on agricultural sustainability as a way of life in rural America. Nathaniel Preheim, who raises bison east of Freeman, is a member of the group.



A view looking down Hebda's high tunnel shows strong crop production even in late season. PHOTO BY NATHANIEL PREHEIM