

NAME:

Mark Haynes

TITLE:

Senior agronomist

COMPANY:

Bula-Gieringer Farms, LLC

LOCATION:

Coloma, Wisconsin

HOMETOWN:

Wisconsin Rapids, Wisconsin

TIME IN PRESENT POSITION:

First year

PREVIOUS EMPLOYMENT:

Black Gold Farms (2019), Mortenson Bros. Farms (2010-2018), Pest Pros (1990-2010), Pavelski Enterprises (1987-1990), Tri-Ag Services (1986) and Centrol (1981-1985)

SCHOOLING: Bachelor of Science degree in agronomy from University of Wisconsin-Madison

FAMILY: Wife of 26 years, Deb, and children, Daren (37) and Danelle (35)

HOBBY: Gardening

INTERVIEW

MARK HAYNES, senior agronomist, Bula-Gieringer Farms

By Joe Kertzman, managing editor, *Badger Common'Tater*

In 1976, as a senior at Appleton West High School, Mark Haynes saw a video presentation given by a group of University of Wisconsin (UW)-Madison students from the College of Agricultural and Life Sciences.

"I thought agronomy looked very interesting," says Haynes, senior agronomist with Bula-Gieringer Farms in Coloma, Wisconsin. "Biology was my favorite subject, and I knew people had to eat food!"

"I also knew from that day forward I wanted to be an agronomist. My first introduction into potato production was a summer internship my junior year at TH Agrichemicals, Plainfield, Wisconsin," Haynes relates. "The good old Temik [Aldicarb carbamate insecticide] days—no beetles, no early dying, just tons of worms."

After graduating from UW-Madison, Haynes' first job was at Centrol in Thief River Falls, Minnesota, as an independent crop consultant for the

Above: Mark Haynes, senior agronomist for Bula-Gieringer Farms, LLC, in Coloma, Wisconsin, takes a selfie before heading off to work during planting season.

With an impressive background of having worked for Black Gold Farms, Mortenson Bros. Farms, Pest Pros, Pavelski Enterprises, Tri-Ag Services and Centrol, Mark Haynes has been involved in some interesting projects. One at Black Gold Farms involved evaluating the efficiency and accuracy of a Harriston clamp planter, a Spudnik cup planter, and a Lockwood Air Cup planter. He says the Lockwood Air Cup (shown) is an accurate, highly efficient planter with great singulation.

northern Red River Valley. There, he worked with seed growers from Lake of the Woods and process growers in the valley.

He has since worked for Tri-Ag Services, Pavelski Enterprises, Pest Pros, Mortenson Bros. Farms, Black Gold Farms and in his present position with Bula-Gieringer Farms.

One of the largest potato and vegetable operations in Wisconsin, Bula-Gieringer Farms was founded, in 1980, when Mark Bula formed a partnership with Mark Gieringer.

The farm has land in Adams County as well as three out-of-state farms, one in the Keithsburg, Illinois, area, and two farms in Florida, one of which Bula-Gieringer Farms owns. Mark bought the Florida farm several years ago.

Bula's son, Shawn, has been working on the farm since he was as young boy and has an associate degree in business and marketing from Mid-State Technical College.

How many years have you been involved in potatoes and vegetables, Mark, and why do you ultimately find it a satisfying field? I have worked in vegetable and potato production for 38 years. I briefly worked as a sales agronomist in southeastern Minnesota for a cooperative in 1986, working with cash corn and soybean growers and hog farmers. Man was that ever boring!

Nothing against corn and bean growers, but I hated the hog barns. I had to watch the Minnesota Vikings every Sunday for six years and not the Green Bay Packers! I wanted to get back to Wisconsin and the crop I enjoyed working with most—potatoes.

A high-risk and high-reward crop like potatoes requires constant attention to water management, disease and pest management, and nutrition. Every day is different and exciting.

I had noticed the big fertilizer tower



at Amherst Junction when driving back and forth from Minnesota and Wisconsin on the holidays. So, I interviewed with Richard Pavelski, and in 1987, he hired me as an agronomist for Pavelski Enterprises.

It was a great experience. I got to know the potato growers in Central Wisconsin and work alongside talented people like Richard, Joe Nagel, Kent Syth and Scott Parr.

Above: There is no substitute for scouting and spending a lot of time in fields, says Mark Haynes. A field of Atlantic potatoes on Black Gold Farms shows early hunger symptoms of magnesium deficiency.

What value do you think your experience brings to Bula-Gieringer Farms? I think it is the unique skill set I have. Having worked as a crop consultant for 25 years, I observed

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many different management techniques on the production side. Also, in 38 cropping seasons, I have seen a lot and the outcomes from different choices.

I have been able to network with other potato agronomists all over the United States and compare notes. This gave me the tools to be a good

agronomist at the farm level.

Seeing the crop every day, doing all the planning and scouting, I can make split-second decisions that are the most economical and profitable for the crop. Because we cannot control the weather, I put my faith and trust in God to make the right decisions.

What makes Bula-Gieringer Farms special to you? I have known Mark Bula for 33 years. I met him in 1987 and began scouting Mark's potatoes while working at Pavelski Enterprises. I continued that role as his crop consultant for the 20 years I worked at Pest Pros.

I have been blessed to move back to Wisconsin after working for Black Gold Farms in Winamac, Indiana, for the 2019 growing season, and getting terribly homesick.

I now work with someone I have known for a long time and in a family situation. In fact, one of my scouts is Shawn Bula's daughter, Kyra. It is very enjoyable and fulfilling, a nice way to end up my career.

Above: Harvest 2020 was in full swing at Bula-Gieringer Farms' Keithsburg, Illinois, location.

Is Bula-Gieringer Farms still raising over 8,700 acres of potatoes in addition to vegetables? Bula-Gieringer Farms raises over 11,000 acres of vegetables. That includes 4,500 acres of potatoes and 5,000 acres of canning crops, sweet corn, snap beans and peas.

There are 650 acres of sweet potatoes, 600 acres of silage corn, 300 acres of alfalfa, 200 acres of grass hay and 400 acres of cattle pasture.

Are most potatoes grown for the fresh market, and are any grown for chipping? Explain. Almost all of Bula-Gieringer potatoes are processed, about half russets and half chips. We are growing 140 acres of table stock russets in Illinois.

What impresses you about Bula-Gieringer Farms? I am impressed most with the resiliency through hard times and the enthusiasm of

PLANTER EFFICIENCY REPORT

Field Name: Shawn 108 Sample Date: 3/15/2020 10 AM
 Variety: Black Diamond Observer: Mark
 Avg. Seed Size (lbs): 1.5 Shaker: 3.5
 Planter # / Operator: 1 / Mark Seed: Black Diamond
 Row Spacing: 30 in Target Depth: 3 in
 Row Spacing: 30 in Target Pop: 22,000

Row	13 Seed Sampler Length	Avg Seed Seeding	13 Seed Sample # of Seeds	% Seeds of Clumps	13 Seed Sample # of Clumps	% Clumps	Actual Plant Pop	% Plant Pop	Avg Seed Depth
1	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
2	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
3	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
4	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
5	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
6	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
7	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
8	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
Avg	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0
Avg Seed Seeding	1.5	0.0	0	0.0%	0	0.0%	0	0.0%	0.0

1. Row one always starts on the left hand side of the planter facing it from the rear.
 2. Row eight is always on the right hand side of the planter facing it from the rear.

Average % Seeds: 0.0% Average % Clumps: 0.0%
 < 5% No Action Necessary < 5% No Action Necessary
 5-10% Make Planter Changes 5-10% No Action Necessary, watch future performance
 > 10% Shutdown Planter > 10% Make Planter Changes

Definition & Examples of Skips: DS=80S+20 Definition & Examples of Clumps: WS=10

Potato agronomists, like Mark Haynes of Bula-Gieringer Farms, live with the crews at planting time, measuring and reporting efficiency, and making necessary adjustments.

a younger generation interested in potato farming. I enjoy mentoring young people when we scout fields.

Is the farming operation still involved in Black Angus cattle, and if so, how many head, and who runs that arm of the business?

Brendan Knapp is our full-time herdsman. He does a great job and loves cattle. We have 175 mama cows and 45 bulls.

What are your main roles and goals as an agronomist, and is each day as interesting as the next?

My main goal is to grow a high-yielding and profitable potato crop, with good quality and long-term storability.

Every year is different, and I incorporate new chemistries or better production techniques when appropriate. It has been a blast! I encourage young students to consider agronomy as a career, especially in high-value crops like potatoes.

Has the coronavirus affected the business or way operations are run?

COVID-19 has affected our business. It has slowed down processing volumes. McCain's, as well as other processors, had a large contract reduction just prior to planting. We had to make a lot of last-minute changes for the 2020-'21 crop year.

What information do you think Mark and Shawn Bula rely most on from you and why?

Mark and Shawn rely on me to schedule weekly pesticide applications based on scouting observations, keep up to date on the



Mark Haynes enjoys solving management problems. In Illinois, tremendous amounts of pitted and ivy leaf morning glory were present in fields. What is the best way to control them?

crop's nutritional status, and add any unscheduled fertilizer and foliar micronutrients based on visual and petiole tests.

I also like to enter crop inputs into databases when I have the time or double-check the work of other people that do that.

The year begins with crop planning. I like to have fields soil sampled in 2.5-acre grids.

In the winter, I work with

prescriptions for VRT (Variable Rate Technology) in applying potash, K-Mag if needed, and sometimes P maps on rented ground if it has low phosphorus [P] values. I also work with dolomitic ag lime maps on ground we own.

Most potato growers lime immediately after the potato crop, so the ground is souring up the next time planted into potatoes.

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When soil pH is dropping, the calcium and magnesium levels rapidly drop. This is considered a best management practice to reduce pitted scab. In this scenario, it is common to see 10 to 20 percent of the field low in magnesium.

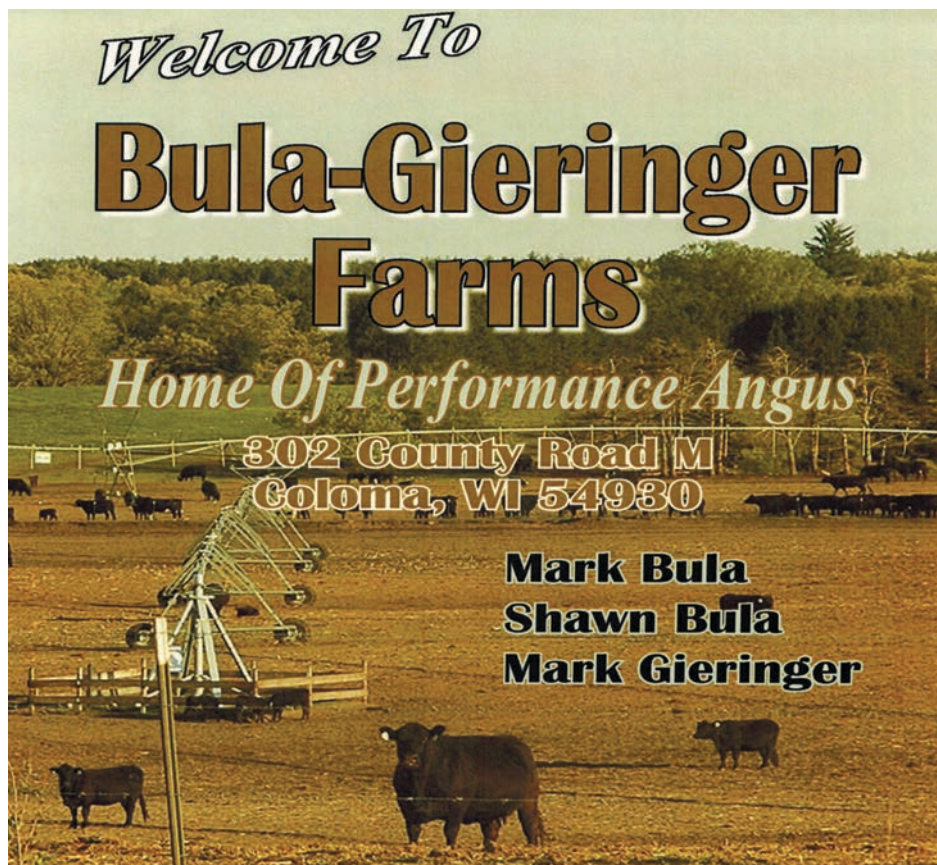
A WISE CHOICE

A VRT map can be made just for these areas. Since this is a \$50- to \$60-an-acre treatment, a VRT map is a wise choice.

In the days before VRT, or if only a composite sample was available, most agronomists would put on half the required rate if the field was low in magnesium and call it good, or maybe not know that a response could be realized. I used to do that myself.

I have a lot of experience where the break lines for soil test values should be and the amount of fertilizer to apply. I have been doing this every year for the last 12 years.

Surprisingly, 95 percent of the corn growers in Illinois and Indiana grid sample. But I bet most potato acres grown in the Central Sands just use composite tests. Maybe that's because good information is not



available to make VRT maps, or just that growers don't perceive a benefit.

I have seen a big benefit. I also have a better grip on what the response will be from micronutrients, specifically zinc (zinc soil test values vary a lot in any place in the field).

Back when I worked for Richard Pavelski, he pioneered grid sampling and VRT applications. I was fortunate to work alongside Joe Nagel as we would ponder and discuss practical break points for management zones.

LIQUID FERTILIZERS

Also, at that time, manufactured dry fertilizers with powerful micro packages were the norm. Now, decades later, the industry has shifted to liquid applications and the micro-applications are limited by being liquid.

I have seen a big shift in soil test levels for zinc, from the 1980's when they were routinely high to now



Above: In addition to potato and vegetable crops, Bula-Gieringer Farms raises Black Angus cattle, with Brendan Knapp being the full-time herdsman. The operation currently has 175 mama cows and 45 bulls.

Left: Prior to planting, potato agronomists spend a lot of time in the seed cutting facility checking size distribution and average seed piece weight. Mark Haynes says he does not like this dusty, noisy job.

when they are often in the low or medium ranges.

Although potatoes are only rated as having a moderate response to zinc, I have seen good response to applied zinc sulfate when soil tests are low, quite often in the range of rates we used back in the '80s. How ironic!

In late March, it is off to the seed room to evaluate seed size, and when we start planting, all my time is spent doing planter efficiency evaluations.

You only get one chance to plant the crop, and it is common for planter depth to get off target. With some seed lots and spacing, it takes a while to get everything dialed in. I help that process along.

I am also responsible for the Illinois operation, performing the same duties as in Wisconsin.

How was the growing season? The growing season went great, though it was kind of nerve-racking after

"I am proud of the fact that, in all my years as a farm agronomist, the farms I have worked at have never had any storage issues related to late blight, despite many years of heavy late blight infection."

– Mark Haynes

planting with the below-normal temperatures. Some of our early planted varieties took almost 40 days to emerge.

But we have been blessed with good weather ever since, I saw tuber development about a week ahead of schedule. I expect to hit harvest goals, and hopefully, better than expected.

Have any issues related to agronomy reared up that you have had to deal

with? One thing that has bugged me as a farm agronomist the last decade is the occasional dud field, one that dies prematurely with only half a crop.

I made it a personal mission to avoid this from happening. Weather we cannot control, and large, untimely rains after planting often produce seed rot. Sometimes you can replant, but sometimes you cannot do that.

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But premature early dying can usually be avoided through variety selection or holding the field out of production for a year or two if the verticillium dahlia levels are too high, or by fumigating at higher rates.

Dr. Ann MacGuidwin, a UW-Madison nematologist, told us at last year's extension meetings that 90 percent of the fields investigated for premature death have high levels of root lesion nematodes.

Most growers do not do early dying tests of their fields the year before planting. This is extremely valuable information. I even like to study the early dying results for the last 10 to 15 years if possible.

Metam sodium is rated only average for nematode control. If the field has high levels the season before, there is a good chance the fumigant will not clean it up.

NEMATODE CONTROL

We have the tools available to manage in-season nematodes. Vydate C-LV insecticide went generic recently, and it only costs about half of what it did a decade ago.

I plan the number of applications based on the nematode pressure the year before. I like to use Velum Prime for in-furrow applications because of worker safety issues, and it lasts a long time in the soil.

For five years, I also have trialed the Certis USA biological product



Two weeks after emergence of Russet Burbank potatoes in Wisconsin, many growers noticed odd herbicide injury symptoms. After networking with other growers and university extension specialists, Mark Haynes still does not know why.

MeloCon, a fungus that attacks only parasitic nematodes. It is a totally safe, effective product to use.

In our Illinois operation, we use MeloCon on most of the acres, no Velum Prime or Vydate. I anticipate using it on a larger percentage of our acres in the future.

Velum Prime got labeled for in-furrow applications a few years back, and we use that if nematode pressure is high. I use a different SDHI (Succinate Dehydrogenase Inhibitors) material for foliar white mold control.

Humic acids applied to chip varieties, when they begin to succumb to wilt in early July, are an effective tool. The best one on the market is BioGro's Premium 21. I like to apply three-to-five gallons an acre. Potato production cost is \$4,000/acre to grow. A \$100/acre investment in fields for premature dying is a good investment.

On large-scale potato production, a few bad fields really reduce the overall yield average in any given year, and so far, I have been happy with the results.



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What are you looking for each day in the field? We monitor insect and disease levels in the potato fields. Depending on the time of year, we do different things.

As plants emerge, and up until before canopy closure, we take stand and stem counts, and lay out any trial work. We check for weed escapes, and sometimes you can have some early season insect pressure.

Once the systemic applications break for beetles at the end of June, we are assessing the levels of beetles and spraying when needed. This goes on until vine killing.

Late June begins a six-to-seven-week petiole testing program. Diseases begin to show up after canopy closure, so we are always trying to protect the mid- to upper-canopy and keep the early blight or brown spot at bay.

A good white mold program is a must, but often overlooked. On some varieties, this is a real challenge. On bad late blight years, scouting is paramount to a successful storage year.

This requires probably twice the normal time, good scouts, and quite often follow-up scouting later in the week.

I am proud of the fact that, in all my years as a farm agronomist, the farms I have worked at have never had any storage issues related to late blight, despite many years of heavy late blight infection.

In 2015, I remember at one point in the middle of summer, we had 25 fields with active late blight.

Late in the summer, we can sometimes see the development of aphid issues, and we are usually spending extra time checking shaded borders for late blight.

What is your role in taking potatoes to storage? After getting our soil samples taken, I hope to coordinate our liming and gypsum fall application. But I will spend time

after vine kill flagging out wet holes or areas that have rot to minimize any bad potatoes getting into storage.

What storage challenges do you face each year, and how long can Bula-Gieringer Farms store potatoes? We store potatoes through June. Some varieties can be real challenging every year to store, like Lamokas. With other varieties, we have not had many issues. Fall harvest with a lot of

rain and heat can be real challenging for any variety.

I understand there is also a trucking operation—how many trucks, and how far do they transport potatoes and/or vegetables? Bula-Gieringer has 40 semis, and we transport potatoes in 25 states and haul back all kinds of different things, from ice cream to paper. **BC'T**



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