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Oregon State University's Erik Feibert, Stuart Reitz and Joel Felix visit during the Malheur Experiment Station Onion Variety Day. See story on page 10.

On the Cover

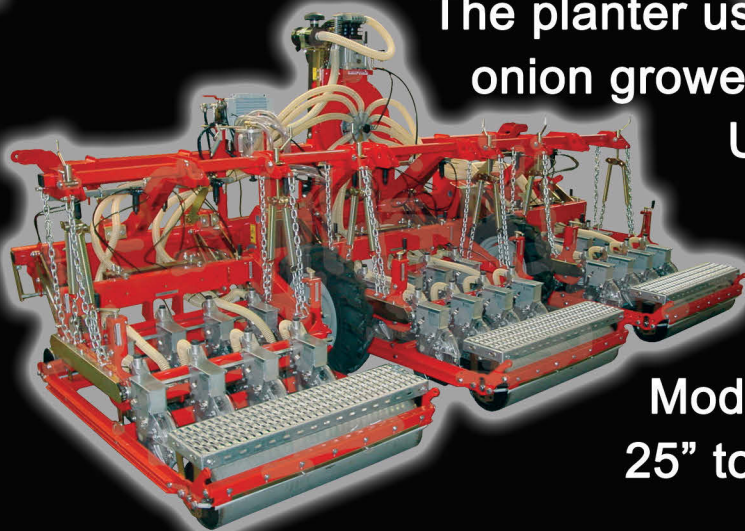
Takii Seed's Atsushi Sugimori and Ryohei Suzuki show off samples of American Takii's Grand Perfection grown in the Washington State University onion cultivar demonstration. Photo by Denise Keller

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2015 WSU Onion Cultivar Demonstration & Field Day

Hot Season Warrants New Crop Management Timeline

Story and photos by Denise Keller, Editor

As August approached September, the Washington State University (WSU) onion cultivar demonstration plot resembled just about every other onion field in the Columbia Basin and Treasure Valley: ready to harvest two weeks earlier than normal. The unusually warm spring and summer in the Pacific Northwest resulted in an early-maturing onion crop.

The high temperatures also upped thrips pressure and likely increased the incidence of certain diseases, according to reports given during the 2015 WSU Onion Field Day, held Aug. 27 at Grigg and Sons Farm in Quincy, Washington. With the 2015 season in mind, researchers discussed farming practices that may prove useful in better protecting crops during hot growing seasons to come.

High Thrips Pressure

Heat early in the year got thrips populations “off to a firing start,” said Tim Waters, a WSU regional vegetable specialist. When it’s warm, thrips develop more quickly, progressing from an egg to an adult – a process that typically takes two to three weeks – in as few as ten days in temperatures around 95 degrees. With thrips going through their life cycle more quickly, the Columbia Basin was probably home to an extra one or two generations of thrips this year, Waters estimated,



Takii Seed's Ryohei Suzuki and Atsushi Sugimori check to see how their variety Grand Perfection fared in the WSU onion cultivar demonstration.

and onions were being attacked earlier.

“When we have hot years, you need to be scouting very early for thrips. Just assume if you have one to two leaves on a plant, you need to be out counting thrips in your field. And once you get one to two thrips per plant, you need to make an application, or it’s going to be really hard to catch up,” Waters advised, noting that growers

needed to begin insecticide applications for thrips by early June this year compared to mid- to late-June in a typical year.

With a higher thrips population, comes greater potential for *Iris yellow spot virus* (IYSV). The incidence of IYSV was higher in some parts of the Columbia Basin this year than the previous several years, according to researchers. An unexpected severity of IYSV



Crookham Company's Purple Haze was among the varieties available to compare and contrast under local growing conditions at the WSU onion cultivar demonstration, held in Quincy, Wash.

appeared in areas where onion bulb and Allium seed crops were grown in close proximity. This may be the result of Allium seed crops maturing more quickly during the warm season, prompting thrips to migrate from senescing seed crops to green bulb crops earlier than anticipated, explained Lindsey du Toit, a WSU vegetable seed pathologist. Monitoring may not have been

happening early enough, and protective sprays may have been applied too late.

du Toit and Waters called for growers to recognize that the timeframe for pest and disease management changes in a hot year. In particular, producers growing onion bulb crops near Allium seed crops should be on the lookout for a “mass migration” of thrips that may occur, and make

timely insecticide applications to minimize the risk of IYSV transmission. Waters added that applications early in the season are more important than later applications because thrips feed by sucking a plant’s photosynthetic material, and damage done early in the season expands as leaves grow.

Increased Risk of Disease

In addition to IYSV, internal dry scale also seems to be more widespread due to the heat. Researchers saw a fair amount of internal dry scale last fall and expect to see even more this year, given the warm conditions experienced in the region and the conditions they suspect cause the problem. Heat stress is believed to cause the crop to slow down physiologically, resulting in leaf-tip dieback. In turn, the top ends of one or more internal fleshy scales dry and collapse.

du Toit also said that she began seeing cases of bacterial rot earlier in the season compared to previous years, and she suspects more bacterial storage rot problems will occur this year than normal. A few weeks following the field day, du Toit reported that, indeed, the Columbia Basin does appear to be experiencing far more bacterial bulb rots as well as far more internal dry scale than in any season she has experienced in the last 15 years, and she is concerned it will get worse as the year goes on.

Although internal dry scale does not cause bacterial rot, according to du Toit, it does increase the risk of bacterial colonization of internal scales as tissue dies and collapses. That phenomenon, combined with growers’ tendency to over-irrigate in very hot conditions or to continue irrigating when the crop is shutting down earlier than anticipated, further encourages bulb rot.

“When the crop starts to dry down quicker and tops start to fall



The WSU onion cultivar demonstration included 43 cultivars and lines from seven different seed companies. Pictured is Arcero, a Nunhems brand yellow Spanish hybrid.

over, the period of risk for fungal and bacterial pathogens to get into the neck and potentially move down to the bulbs is happening earlier than we might anticipate. Growers need to recognize the need for implementing management practices sooner, including cutting back or stopping irrigation a little earlier than they might otherwise,” du Toit advised. “We know what the risks are in a normal season, but those risks come quicker and with more intensity in a year like this.”

Careful management of irrigation and fertility could potentially help reduce the incidence of internal dry scale, according to du Toit. In addition, she discussed a possible need for further research to learn how to manage bacterial rot in very hot seasons, as well as studies looking at irrigation management – especially center pivot irrigation – in hot growing conditions. 🍅



The crop from the WSU onion cultivar demonstration was left in the field long enough for field day attendees to view, but was ready to harvest by the Aug. 27 event – two weeks earlier than normal.

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Malheur Experiment Station Onion Variety Day

Variety Trial Provides Side-by-Side Seed Comparison

With more than half of the onions in the Treasure Valley grown under drip irrigation, the researchers at the Malheur Experiment Station in Ontario, Oregon, decided to conduct their annual variety trial under drip irrigation this year, as well, in order to give growers a more representative look at the varieties' performance.

More than 100 growers and industry representatives attended the station's

Onion Variety Day on Aug. 25 to view the trial, which included six early-season varieties from three seed companies and 40 full-season varieties from eight seed companies.

New to the trial this year were two cultivars: Crookham Company's Red Beret, described as a very productive red long-day onion with very good internal and external color, and American Takii, Inc.'s Grand Perfection, described as a late-maturing, long-day Spanish onion with a tall globe shape and a good percentage of single centers.

Trial entries are evaluated for plant disease, maturity, bolting, bulb single centers, yield and grade out of storage.

The onions in this year's trial matured about two weeks earlier than normal because of an unusually warm season. Temperatures were higher than

average from January through June with the highest growing degree days since records began in 1990, according to Malheur Experiment Station's Erik Feibert.

Thrips control was excellent until mid-July, Feibert reported. After mid-July, thrips leaf damage became evident, and by early August, *Iris yellow spot virus* (IYSV) was also appearing. Feibert assessed thrips leaf damage as "high" and IYSV damage as "moderate" this year. Varietal differences in the effects of thrips and IYSV were evident and evaluated, although data has not yet been analyzed.

Bulbs of each cultivar were harvested and put into storage until grading in early January. The results of the trial will be shared at the Idaho-Malheur County Onion Growers Association Annual Meeting in February. 🍅

A row of Crookham Company's Oracle onions, one of 46 cultivars in Malheur Experiment Station's annual variety trial, is displayed during the station's Onion Variety Day.



Onion Variety Day attendees Deron Beck, Seminis, and Sheree Jones, Potandon Produce, inspect some of the onions grown in this year's trial.



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Nunhems Showcase

Onion Showcase Spotlights



During the last five decades, onion prices have proven to be more volatile than many other known “boom-and-bust” commodities including coffee, sugarcane, gold and oil. This was one point in a presentation by Jeff Boettge,

global head of marketing and sales for onion with Bayer CropScience Vegetable Seeds. He shared insights into a global outlook on the onion market during the company’s annual Onion Showcase held Aug. 26 at Story Farms in Roswell, Idaho.

“Onion is a difficult commodity crop for everyone involved in it, whether you’re producing seed, growing onion bulbs, or trading onions in the market,” Boettge said.

Of all the vegetable crops, onions are perhaps the most at

Crop as Global Commodity

Bayer CropScience Vegetable Seeds has been holding an Onion Showcase annually since 1983 as a way to show the company's appreciation for its customers. Representing the company, from left: Rene Emch, Jeff Boettge, Kent Whittig, Emily Stirlen, Travis Whitney, Ashley Southerland, Bryan Bair, Riley Woodruff, Juan Carlos Brevis, Rebecca Turner. Photo courtesy Bayer CropScience Vegetable Seeds



the mercy of global dynamics, according to Boettge. With limited price elasticity, the crop is very subject to supply and demand variables. More recently, the market is becoming further complicated by geopolitical events.

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Nate Cole, Zach Wortiska, Aaron Groves and John Guerard represent Grimmway Farms at the Onion Showcase.



Jeff Boettge

“You can do everything right in your part of the world and still not make money because of outside factors that you really have no control over,”

Boettge explained. “Onion is a really global crop with a lot of international interactions and connections. Events that are seemingly half a world away have a direct impact on the price of onions in Weiser, Idaho, in January.”

Currently, the yield and bulk quality of the long-day onion crop is coming in under market average, according to Boettge, which should mean global onion prices to growers will be “reasonably good.” However, Boettge cautions growers against speculating on what will happen in the market.

“If you’re in onions and you don’t have a decades-long-term approach to the market, you’re going to get burned,” he warned. “Be in the crop long-term and be stable in it. Take your lumps when they happen, but don’t overreact one way or the other.”

In addition to hearing from Boettge, the more than 150 attendees of the Onion Showcase had an opportunity to view the company’s variety trial, which included 18 cultivars. This year’s trial was very impressive with high yields and excellent quality, according to René Emch, a product specialist for onion and carrot.

“Joaquin was the high yielder this year. Due to the hot year, it was able to finish and show its full yielding potential,” Emch reported. “Most years, due to the early date of the Showcase, Joaquin does not have a chance to finish and show its true colors.”

The bulbs are in storage now and will be commercially graded this January. 🍷

Onion Showcase attendees view the 18-cultivar variety trial.





The variety trial, hosted by Story Farms in Roswell, Idaho, resulted in high yields and excellent quality.

In the Market

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from Nufarm Americas, Inc., is now listed with the Organic Materials Review

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Seminis Potentic

By Deron Beck and Richard Navarrete, Seminis

The 2015 Seminis Onion Field Day, held Aug. 24 at Skeen Farms in Nyssa, Oregon, intrigued growers and industry specialists from around the Treasure Valley.

The field demonstration included strip trials and binned samples of Seminis' current yellow onion portfolio suited for the region. Strong-yielding onion hybrids were highlighted in the demonstration. SV6672NW has a maturity of 114-116 days and a long storage potential. XP07716000 is a 118-day hybrid that produces a high percentage of colossals and has great internal qualities for processing. And SV6646NW is a 122-day Spanish hybrid with an attractive scale and high level of single centers.

Surrounding the demonstration were field productions of XP07716000 and SV6646NW, a selection of Seminis' long-day onion portfolio that has become an important part of Skeen's onion operation.

Also included were three new pre-commercial yellow hybrids that are under heavy screening for new potential advancements.

"We have seen increasing levels of viral, fungal and bacterial pressure over the last several years in the Pacific Northwest, and that is creating more work for new hybrid selections," explained Deron Beck, a local Seminis representative. "Along with higher levels of disease tolerance, we are looking for hybrids with

Local Seminis Representative Deron Beck welcomes growers and industry specialists to the Seminis Onion Field Day held at Skeen Farms in Nyssa, Ore.



Field day attendees take a close look at a variety on display at the Seminis Onion Field Day.



Richard Navarrete, Seminis, and Tiffany Cruickshank, Snake River Produce, show off the progress of the Nyssa High School greenhouse project funded last year by Monsanto's America's Farmers Grow Rural Education program.

Demonstrates High- Potential Hybrids

high adaptability to diverse soils and tolerance to heat stress.”

He continued, “In addition to six replicated breeder trials established in the region, we are vigorously trialing with numerous growers and dealer networks throughout the region to peg high-potential onion hybrids with increased levels of disease tolerance.”

During the lunch hour, Snake River Produce Sales Representative Tiffany Cruickshank updated growers on the progress of the Nyssa High School greenhouse project. Last year, Nyssa High School was awarded a \$25,000 grant funded by the America’s Farmers Grow Rural Education program. This program – which is a part of Seminis’ parent company, Monsanto – allows growers to nominate rural education-based organizations in their local communities.

The grant has allowed the small farming community of Nyssa, Oregon, to construct an updated greenhouse that includes advanced resources necessary to enable the high school’s ag education students to perform science-based experiments.

This year’s Treasure Valley grant recipients include Willow Creek Elementary School and Homedale High School.

To find out more about the America’s Farmers Grow Rural Education program, visit www.americasfarmers.com.



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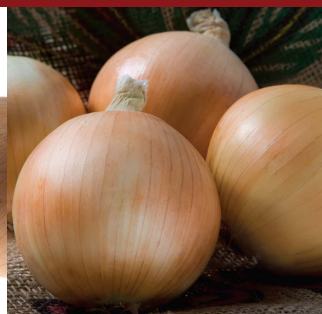
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Butler Farms

Small Farm, Big Flavor

By Andrew Hind



Betty was Tommy Butler's first date in high school, but they later married other people. When their respective spouses passed away, love went full circle and Tommy and Betty wed in 2014. "I tell people she was my first and last date," Tommy says. Photo courtesy Butler Farms

Tommy Butler's Vidalia onion-growing operation is an intimate one. He grows his flavorful onions – “Some say they are the sweetest onions they've ever tasted,” Butler says without a hint of boasting – on only 2.5 acres of land. He uses traditional methods, handling each and every onion with care and respect. And, Butler treats his customers with genuine respect and warmth, so much so he even receives Christmas cards and letters of well-wishes from them.

Butler Farms is a throwback to a simpler time in many ways. A true southern gentleman, Butler wouldn't have it any other way.


“I enjoy growing onions. Farming is in my blood. And I enjoy meeting customers – they're like family to me,” he says simply. “This is a passion for me.”

A Love for Farming

It's also a lifestyle that began early for Butler. He was born and raised on the Dexter, Georgia farm which his uncle owned and on which his father was a sharecropper, and soon the discipline of a farmer was instilled in him. From a very young age, Butler was tasked with doing chores such as milking cows and putting them out to pasture before he headed off to school for the day. When class was let out, the boy had more chores to look forward to, including herding the cows back into their barn. Whereas some children might chaff at




Tommy Butler leaves his onions on the surface to dry in the sun for four days after plowing. Photo courtesy Butler Farms

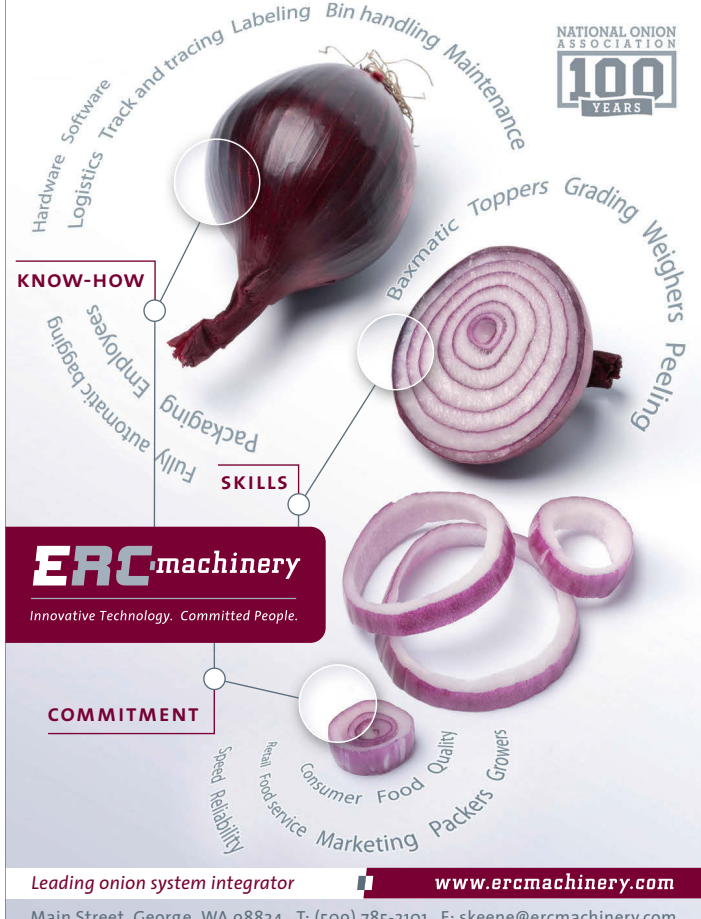


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Tommy Butler stands beside the sign to the farm founded more than half a century ago by his uncle, and on which Tommy was raised. Photo courtesy Butler Farms

such responsibility, Butler not only accepted it but actually embraced it.

“I enjoyed it, and the work developed an appreciation for the farm. I was born on this land, raised on it and still live on it. In many ways, it’s who I am,” Butler explains.

In 1958, Butler’s uncle sold the land to his father. But only six years later, Butler’s father had a massive heart attack and was reluctantly forced to retire. What was to become of the farm? For Butler, there was never any question; single and working at the time, he would buy the land and keep it in the family. So, that’s what he did, farming evenings and weekends while working full-time weekdays.

Butler didn’t just preserve the farm but added 100 acres to it in 1968 when neighbors to the east offered a spread for sale. Butler Farms sat at 250 acres. In 1996, another 50 acres to the east became available, so Butler added it. His final purchase came in 2006 when he purchased another 50 acres that originally belonged to his grandmother, about 1.5 miles south of his farm, bringing the total for the farm to 350 acres at which size it remains today.

For years, the staples on the farm were cattle and sugar-cane for syrup, but that changed in an improbable way in 1980. Butler found himself in a hardware store when he just happened to spy Vidalia bulbs for sale. Intrigued, he bought



Butler Farms cultivates 2.5 to 3 acres of Vidalia onions each year. Photo courtesy Butler Farms



Sweet Vidalia onions rest on pallets ready to be shipped to independent grocery stores across the U.S. Photo courtesy Butler Farms

100 plants and was impressed with the size and sweetness of the onions that resulted. Butler never looked back, buying a few more every year until he had between two and three acres under cultivation (the most he ever grew was 3.5 acres).


“At first I couldn’t sell them as Vidalia onions because I wasn’t in the right area; to be a true Vidalia onion grower, you need to be located within specific geographic borders. So, for a few years I had to sell them as ‘Sweet Onions,’ which was accurate enough because they are sweet. That changed when the Georgia General Assembly passed a law designating an

official area that Vidalia onions could be grown, and I was able to officially label them as Vidalia onions. I’ve been a certified Vidalia Onion Grower since 1986,” Butler remembers.


A Reputation for Flavor

The soil and climate in Dexter, Georgia, is ideally suited to growing Vidalia onions.

“The soil here is the loamy, sandy soil favored by Vidalia onions,” Butler says. “And most winters are mild, getting into the 70s many days. The temperature rarely dips be-



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Butler Farms is the smallest of the Certified Vidalia Growers, but has an enviable reputation for sweet onions. Photo courtesy Butler Farms

low freezing. The few times we dip below freezing doesn't seem to affect the onions much. In 2014, we had a full week of freezing temperatures dipping as low as 7 degrees. The onions rebounded, but the percent to grow to jumbo size was less than normal. However, they were still sweet. They're a resilient onion."

Butler plants in November and harvests in May. He grows full-season onions and leaves them in until the majority of the tops fall over, indicating they have reached full maturity. The fields are plowed, lifting the onions to the top of the dirt, where they are left to dry in the sun for four or five days. Butler doesn't have cold atmosphere (CA) storage facilities. Instead, the onions are put on pallets under a shelter with fans to circulate the air and keep them cool.

Sales to independent grocery store operators and the public through website orders begin around May 10 and last into July. He ships to customers in New York, Washington state, California, Florida and many states in between.

"I've developed a reputation for good, really sweet onions. People at some grocery stores I supply specifically ask produce managers for Tommy Butler onions," he says proudly. "I had a gentleman from Maryland call once about onions. He asked if my onions were real sweet. I told him yes and that I would ship him a 10-pound box and if they weren't the sweetest onions he'd ever tasted, he would owe me nothing."

Butler continues, "A while later, he called me back and said, 'my friend, you have a customer for life. I want you to send me a box at the beginning of the season and every three weeks until they are gone, every single year.' He agreed that they were, in fact, the sweetest onions he'd ever tasted."

What's the secret? Butler says it's the process by which he cultivates and harvests the onions – leaving them in the ground to reach full maturity and allowing them to dry in the sun – that's responsible for them containing so much flavor.

Butler Farms is the smallest certified Vidalia Onion Grower, but Butler carries that title with pride. It means he gets to know his customers in a way larger producers can't, and it ensures each and every onion pulled from the soil is treated with the utmost care. Though retired from his full-time job, Butler has no plans to step away from farming. He loves it, and the people it brings him in touch with, far too much. 🍷

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Nov. 4-5

UK Onion & Carrot Conference & Exhibition, Kingsgate Conference Centre, Peterborough, United Kingdom. Visit <http://www.onionandcarrotconference.co.uk/>.

Nov. 18-19

Pacific Northwest Vegetable Association Conference and Trade Show, Three Rivers Convention Center, Kennewick, Wash. Contact Sheri Nolan, (509) 585-5460 or visit www.pnva.org.

Dec. 2-5

National Onion Association Annual Convention, Argonaut Hotel, San Francisco, Calif. Visit www.onions-usa.org.

Dec. 8-10

Great Lakes Fruit, Vegetable and Farm Market EXPO, DeVos Place Conference Center, Grand Rapids, Mich. Visit www.glexpo.com.

2016

Jan. 19-21

Empire State Producers Expo, Oncenter Convention Center, Syracuse, N.Y. Contact New York State Vegetable Growers Association, (585) 993-0775 or visit www.nysvga.org.

Editor's Note: To have your event listed, please email the editor, Denise Keller, at dkeller@columbiapublications.com. Please send your information 90 days in advance.



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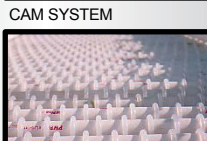
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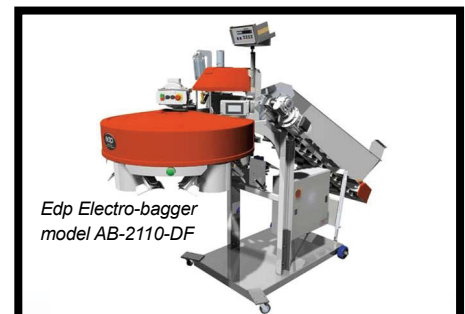
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In the News

EPA Overhauls Agricultural Worker Protection Standard

In the first revision since 1992, the Environmental Protection Agency (EPA) has updated the Worker Protection Standard intended to protect farmworkers and their families from pesticide exposure.

The new set of rules will prohibit anyone younger than 18 from handling pesticides and require buffer zones around treated fields. It will also increase the frequency of pesticide training for farmworkers from every five years to every year. Other revisions include requirements for additional documentation and recordkeeping.

Farm owners and their families will be exempt from the proposed rules.

Many of the rules that EPA is proposing nationwide have already been adopted in states including Washington and California through state regulation.

The majority of the EPA's rule revisions will be effective approximately 14 months after the rules are published in the Federal Register, which is expected to happen by the end of the year.

FDA Finalizes First FSMA Rules

The FDA Food Safety Modernization Act (FSMA) Preventive Controls for Human Food rule is now final. In short, the rule requires registered food facilities to implement a food safety system that includes an analysis of hazards and risk-based preventive controls. Facilities also have to verify and document that their controls are working.

Very small businesses have three years to comply with the rules, small

businesses have two years, and the rest have one year. Operations that meet the rule's definition of "farms" are not subject to the preventative controls rule, although they will still be subject to the forthcoming produce safety rules.

The FDA is developing guidance documents to provide clarification on several aspects of the rule. The agency also plans to provide training and technical assistance to support industry understanding and implementation of FSMA.

Meanwhile, FSMA's produce safety rules, which include irrigation water quality requirements of interest to the onion industry, are set to be finalized by Oct. 31.

Trans-Pacific Partnership Heads to Congress

With the Trade Promotion Authority bill signed into law this summer, which gave President Barack Obama "fast-track authority" in negotiating international trade deals, the president agreed to the Trans-Pacific Partnership this fall.

The historic free trade deal between the U.S., Canada and 10 countries across the Asia-Pacific region will eliminate or significantly reduce tariffs on numerous U.S. products. The agreement will provide "a more level playing field in trade for American farmers," according to a statement from Agriculture Secretary Tom Vilsack. The agreement and its removal of unfair trade barriers will increase American agricultural exports, Vilsack said, listing vegetables among the exports expected to increase.

The agreement must now be voted on by Congress, where it is expected to meet some opposition.

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Managing Stemphylium

By Christy Hoepting, Cornell Cooperative Extension Regional Vegetable Program

A curious situation occurred during the 2012 and 2013 onion growing seasons in New York, where despite favorable conditions for growing onions, a lot of fields suffered from excessive leaf dieback and the onion plants died prematurely or “standing up” (Fig. 1). It was determined that *Stemphylium* leaf blight (SLB) was a causal factor.

SLB Steps up as Aggressive Leaf Disease

SLB is a foliar disease of onions caused by the fungus *Stemphylium vesicarium*. This fungus invades necrotic leaf tissue. Individual lesions quickly develop into elongated, boat-shaped, tan lesions that later turn black when spores develop (Fig. 2). The elongated spots coalesce into extended patches blighting the leaves, and eventually the onion plant dies standing up. When this happens, the neck does not mature properly, which can lead to poor storage ability, especially from secondary bacterial decay.

The SLB fungus commonly occurs in onion as it invades necrotic leaf tissue caused by natural leaf dieback and tip burn, disease and injury. Typically, it stays in the necrotic tissue that is already dying. It also invades downy mildew and purple blotch lesions, and is commonly found in association with these leaf diseases (Fig. 3), but more so as a secondary pathogen that would not exist if these diseases had not occurred.

Onion growing regions in Ontario, Canada, have also reported SLB as a newly emerging foliar disease of onion. It is not known exactly why SLB has moved from its usual background position as



Fig. 1. When onions die prematurely or “standing up,” they don’t mature properly, resulting in poor storage quality.

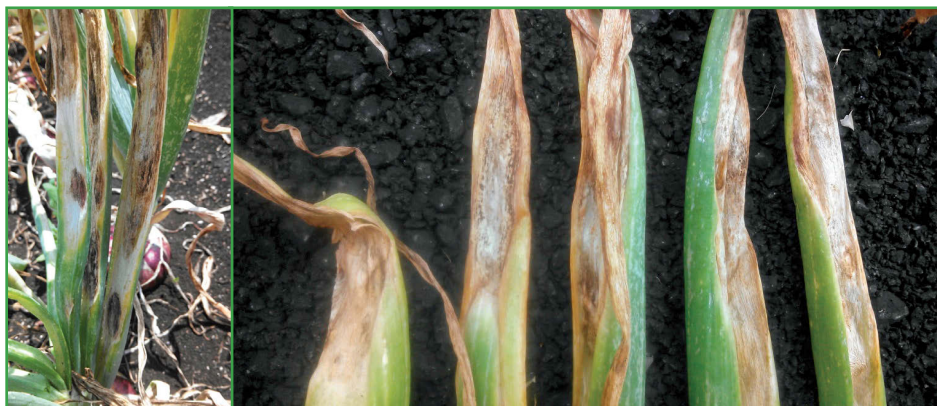


Fig. 2. Extended lesions of *Stemphylium* leaf blight (SLB) showing target-spot lesions with black sporulation (left). However, early in development, SLB lesions tend to be more tan (right).

a secondary disease into the forefront as an aggressive pathogen. However, SLB is now considered a major player in the onion leaf disease complex on both sides of the border, and efforts are underway to figure out how to manage it.

Downy Mildew is to Onions as Late Blight is to Potatoes

Generally, downy mildew (DM) is considered a sporadic

disease of onion in western New York. It is favored by cool temperatures (less than 72 degrees Fahrenheit) and long periods of dew. Typically, it is not a concern until mid-August through September once the heat wave of summertime gives way to cool nights and heavy dews. However, since the DM epidemic of 2009, it seems that it is more common for DM to first show up in July. Downy mildew is to onions as late blight is to potatoes; it

Onion Leaf Blight and Downy Mildew



Fig. 3. Infection site of downy mildew in onion about 2-3 weeks old. Secondary pathogens of *Stemphylium* leaf blight (black) and purple blotch (purple) are invading the original infection sites, while new spores of downy mildew occur on surrounding green tissue.



Fig. 4. The downy mildew epidemic of 2009 showed that downy mildew of onion is a very aggressive defoliator and very challenging to control when conditions are favorable.

can be a very aggressive leaf defoliator and also result in premature death. When weather conditions are favorable, it is very challenging to manage a DM outbreak (Fig. 4).

Breakthroughs in Managing SLB and DM with Fungicides

During 2013 and 2014, Cornell Cooperative Extension Onion Specialist, Christy Hoepting, conducted on-farm small-plot research trials where she compared over 20 fungicides for their activity against SLB, DM, purple blotch and *Botrytis* leaf blight.

In 2013, Luna Tranquility provided the best control of SLB, representing 84 percent control compared to the untreated (data not shown).

In second place were Fontelis and Merivon with 63 percent control. Unfortunately, none of these products are currently labeled on onions in New York. Of the labeled fungicides, Pristine (47 percent) and Inspire Super (43 percent) provided the best control, followed by Quadris Top and Scala (both 34 percent control). Also very important to note is that active ingredients mancozeb, iprodione (e.g. Rovral) and chlorothanil (e.g. Bravo) failed to control SLB. All products were applied weekly at maximum rates.

It is recommended in New York for onion growers to include a fungicide with good activity against SLB in every spray starting in July once bulbing begins. Designing a spray program can be tricky

because of several rotation restrictions on the SLB fungicides. For example, Inspire Super cannot be rotated with Quadris Top nor can Quadris Top be rotated with Pristine, and generally no more than one to two sequential applications are allowed before rotating to another fungicide class.

A severe outbreak of DM occurred at the site where the 2014 fungicide trial was conducted. The first fungicide applications were made on July 24 when foliage was healthy, just after the first DM infection sites were observed (Fig. 5). By August 13, the trial average for the amount of green foliage was 54 percent, which dropped to 12 percent just two weeks later. In the untreated plots, an average of 92 percent of

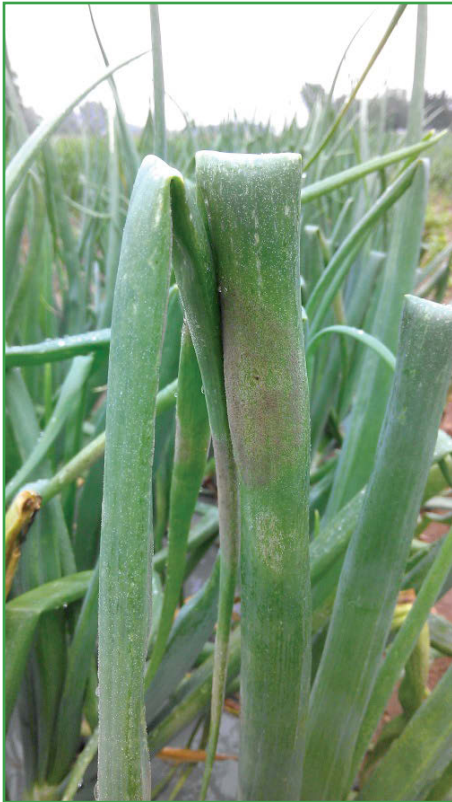


Fig. 5. For early detection of downy mildew in onion, look for elongated pale green or yellow patches with purplish fuzzy sporulation.

the onions had died standing up (data not shown). SLB invaded the DM-infected plants and greatly contributed to leaf dieback. Due to the rapid progression of disease and leaf dieback, data collection focused on plant health parameters (Fig. 6). All of the plants in the trial were infected with DM and SLB; emphasis was placed on delaying the progression of leaf dieback to the extent that plants would mature and lodge properly, as opposed to dying standing up (Fig. 7).

Fungicides for SLB Control Critical to Managing DM Outbreak

The highest total plant health score based on five evaluation criteria was achieved with the “Cornell program,” which was 275 percent higher than the untreated check (Fig. 6), and in which only 7 percent

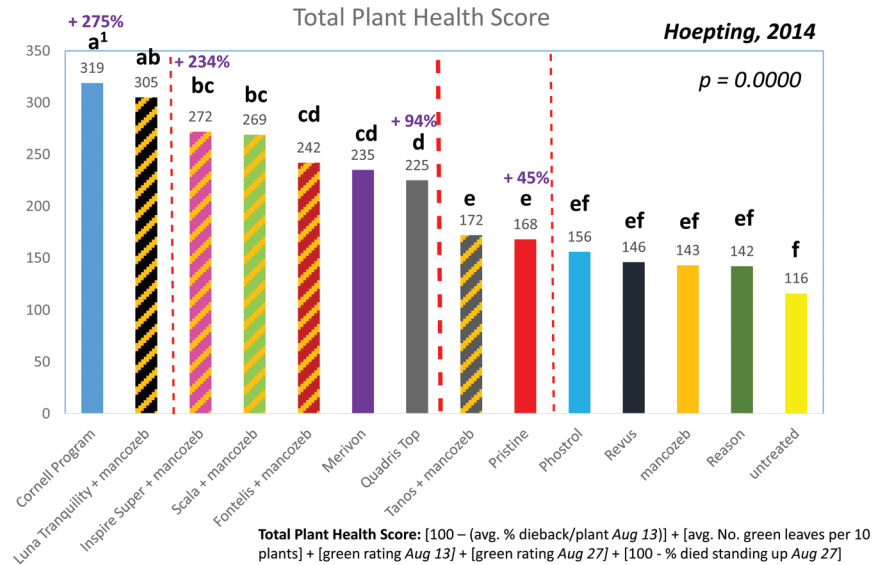


Fig. 6. Total plant health score (high score = best control) of selected fungicides for managing *Stemphylium* leaf blight and downy mildew disease complex in onion, 2014.

¹Bars followed by the same number are not significantly different, Fisher's Protected LSD test ($p < 0.05$). All treatments were applied weekly at maximum labeled rate.

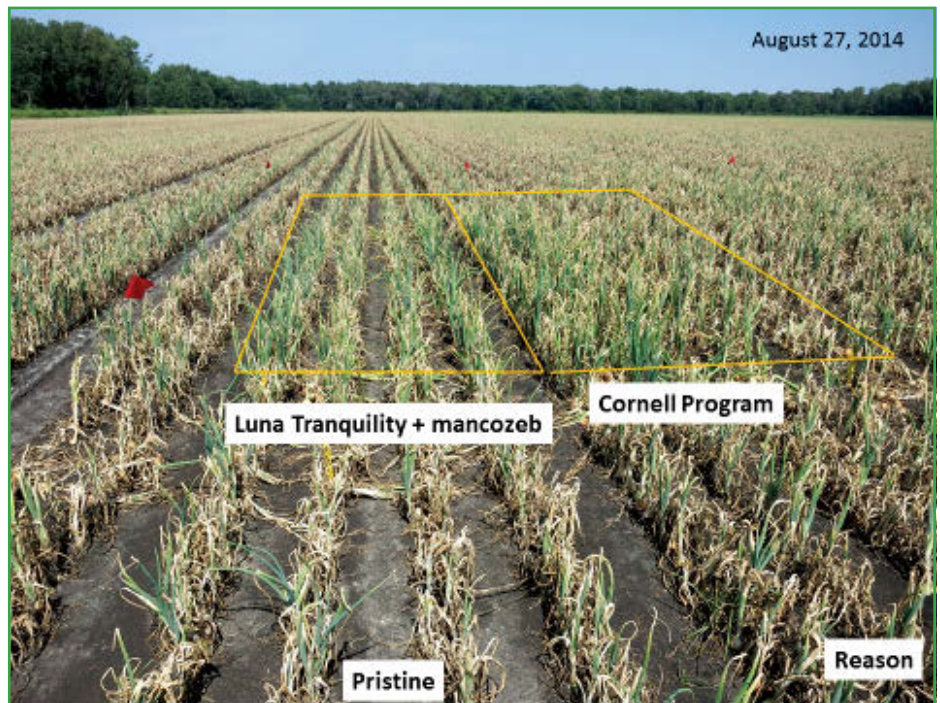


Fig. 7. Under severe downy mildew and *Stemphylium* leaf blight pressure, the goal of this fungicide trial was to manage this disease complex so that the onions would mature properly and not die standing up. The top two performing treatments are highlighted in yellow.

of the plants died standing up (data not shown). The Cornell program included mancozeb for DM protection in every spray, maximum allowable usage of Ridomil Gold Bravo for DM and a fungicide with good

activity against SLB in every spray (Table 1).

Luna Tranquility + mancozeb performed statistically as good as the Cornell Program with only 3 percent of the plants having died standing

Table 1. Cornell program for managing downy mildew in onion, treatment in 2014 fungicide trial.

| | Fungicides applied | Target disease ¹ |
|--|--|-----------------------------|
| Week 1 <i>(preventative)</i> | Quadris Top 14 fl oz + mancozeb | SLB, DM DM |
| Weeks 2 & 3 <i>(DM detected)</i> | Ridomil Gold Bravo 2.5 pt + mancozeb 3 lb + Scala 18 fl oz | DM DM SLB |
| Week 4 <i>(must rotate away from Ridomil)</i> | Pristine 18.5 oz + mancozeb | SLB, DM DM |
| Week 5 <i>(last allowable app of Ridomil Gold)</i> | Ridomil Gold Bravo 2.5 pt + mancozeb 3 lb + Scala 18 fl oz | DM DM SLB |

¹SLB: Stemphylium leaf blight; DM: downy mildew.

up (data not shown). Inspire Super + mancozeb and Scala + mancozeb placed third and fourth, respectively, and not statistically different from Luna Tranquility + mancozeb. In fifth place was Fontelis + mancozeb.

It is interesting how well these treatments performed because, with exception of mancozeb, the active ingredients in these fungicides are not known to have any activity on DM. All of these treatments scored significantly higher than mancozeb alone (Fig. 6). These results suggest that managing SLB is critically important when managing a DM outbreak.

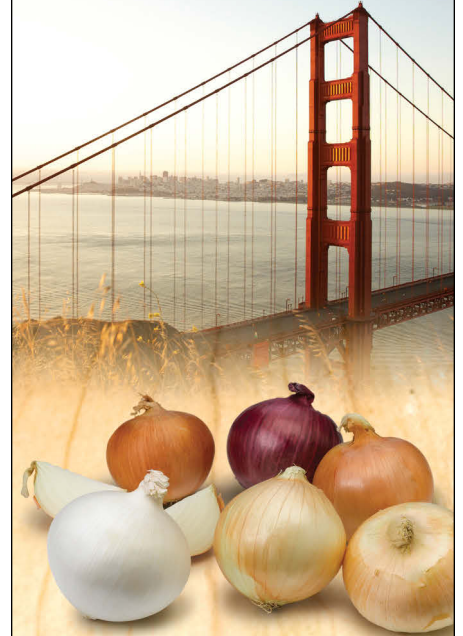
Reason, mancozeb, Revus and Phostrol did not score significantly higher than the untreated check for plant health (Fig. 6). These treatments along with Pristine and Tanos + mancozeb also had 75 percent

or more plants die standing up, which was statistically the same as the untreated (data not shown). We know from previous trials that mancozeb does not have any activity against SLB, and we assume that aside from Pristine, none of these other products do either.

The New York onion industry looks forward to registrations of Luna Tranquility and Fontelis for control of SLB. More fungicide trials for SLB and DM were conducted in 2015; stay tuned for results.

For more information, visit the Cornell Vegetable Program website at <http://cvp.cce.cornell.edu/> and click on “onions” from the top menu, or contact Christy Hoepting at (585) 798-4265 ext. 38 or cah59@cornell.edu.

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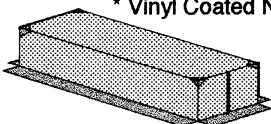
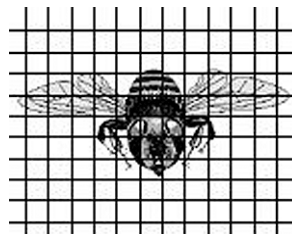
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Canadian Onion Crop, Prices Looking Good

By Myron Love

While there were some issues with disease and hail in some regions, overall Canada's onion production is looking good for 2015.

"Last year, we registered our largest yield in many years," says Jody Mott, the interim executive director of Southern Ontario's Holland Marsh Growers' Association. "While it is still a little too early to tell, we are optimistic that this year's yield will be almost as good."

Mott reports that market conditions and pricing are also looking good.

Ontario, Canada's most populous province, has more than 250 growers concentrated in the Holland Marsh area just north of Toronto. Growers in the area seed 7,500-8,000 acres of mainly yellow cooking onions, along with some red and cooking onions.

In neighboring Quebec, Charlene Newton, the executive director of Montreal-based marketing group Groupe Vegco Inc., reports that the weather this year was cooperative and she is expecting the yields to be about the same as last year.

"We won't know for sure until we finish harvesting," she says.

As for pricing, she points out that the decline in value of the Canadian dollar in terms of the American greenback will help Canadian growers' bottom lines.

She reports that there are 80 growers in Quebec – 15 of whom are members of Groupe Vegco – who planted about 1,400 acres this year. The Quebecers grow mainly yellow onions, along with some red.

Mark Sawler with Sawler Gardens in Nova Scotia in the Maritimes reports some disease pressure that had a limited impact on his yields this year. But, he notes, the quality was good. As to pricing, he says that he is seeing some of the best pricing in years. Sawler Gardens plants about 150 acres of yellow onions.

Larry McIntosh, president and CEO of Manitoba vegetable marketing co-op Peak of the Market, reports that the onion crop in Manitoba, which borders Minnesota and North Dakota, was on time this year, but hail early in the season wiped out about 40 of the 300 acres Manitoba growers usually seed.

"Our red and jumbo onion production is down this year," he says. "Our production of yellow and white onions is about the same as last year, and pricing is about the same." 🧅

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