

# NEWS

October 2021 / Volume 44 Number 9

for the commercial vegetable, potato and berry grower



## 2022 Mid-Atlantic Fruit and Vegetable Convention Set for February 1 to 3 at the Hershey Lodge

### Plans Underway for an In-Person Event

The 2022 Mid-Atlantic Fruit and Vegetable Convention will be held in-person at the Hershey Lodge on February 1 to 3, 2022. Dr. David Kohl, noted agricultural economist and speaker, will be the keynote speaker. A farm market bus tour and several pre-convention workshops will be offered on January 31, 2022.

Normally over 2,200 fruit, vegetable, and berry growers and other industry personnel from throughout the mid-Atlantic region and beyond gather in Hershey each year for what has become one of the premier grower meetings on the East Coast. As with most similar events, last year's Convention was held virtually. While the virtual event was successful in providing a meaningful educational event for growers, the overwhelming sentiment was that it could not replace the in-person interaction between fellow growers and exhibitors that growers value at an in-person event. Thus, the 45th annual edition of the Mid-Atlantic Convention will return to the Hershey Lodge in Hershey, Pennsylvania.

Plans are being made to offer exceptional educational sessions on a full-range of topics in tree fruit, vegetable, small fruit, and potato production plus retail and wholesale marketing. Greenhouse ornamental and cut flower sessions will also be offered along with a special session presented in Spanish for Spanish-speaking industry members. A schedule of planned sessions is shown below. A more detailed schedule with topics and speakers will be announced in the coming weeks.

The day before the main Convention opens, growers can choose between a bus tour of farm markets or several different workshops. The workshops include FSMA Grower Training, Basic Greenhouse Floriculture School, Conducting and Analyzing On-Farm Research, New Technology in Agriculture, Hemp Production, Farm Transition and Pennsylvania Pesticide Applicator License Training.

The Mid-Atlantic Fruit and Vegetable Convention is honored to have Dr. David Kohl as the keynote speaker for the 2022

Convention. Dr. Kohl is a noted agricultural economist and farm management speaker from Virginia Tech University who regularly speaks to over 20 young farmer programs annually. Kohl is Professor Emeritus of Agricultural Finance and Small Business Management and Entrepreneurship in the Department of Agricultural and Applied Economics at Virginia Tech, Blacksburg, Virginia. He was on special leave with the Royal Bank of Canada working on advanced initiatives for two years, and also assisted in the launch of the successful entrepreneurship program at Cornell University. Kohl has traveled over 10 million miles throughout his professional career! He has conducted more than 7,000 seminars and webinars for agricultural groups such as bankers, Farm Credit, FSA, and regulators, as well as producer and agribusiness groups.

The Mid-Atlantic Convention has been jointly sponsored by the State Horticultural Association of Pennsylvania, the Pennsylvania Vegetable Growers Association, the Maryland State Horticultural Society and the New Jersey State Horticultural Society for the past 44 years. In 2014, the Virginia State Horticultural Society also began meeting at the Convention. The Pennsylvania State University, University of Maryland, Rutgers University Cooperative Extension and Virginia Tech University all assist in organizing the three days of educational sessions.

The Great American Hall and the Aztec Room at the Hershey Lodge will host most of the Trade Show with several additional booths being located in the Confection Level Lobby. Specialized horticultural equipment, farm market merchandise, and packaging will all be on display along with information on the latest seed varieties, fruit varieties, pesticides and other supplies and services for the commercial grower.

Many pesticide applicator update training credits will be available to Pennsylvania, Maryland, New Jersey and Virginia growers attending the sessions. The program covers nearly every aspect of fruit, vegetable, potato and berry production. Commercial growers should not pass up this terrific educational opportunity.

*Continued on page 23*



# OUTSTANDING SEED COMPANY, LLC<sup>®</sup>

B R E E D E R | P R O D U C E R

Outstanding Seed is an innovative seed company specializing in breeding, production, and marketing of proprietary, large handled, high yield potential, Powdery mildew resistant pumpkin, gourd, and winter squash hybrids.

Over fifty hybrids are available to meet many different needs. Call today to place an order or request our 2022 Catalog.

## First Grade F1

- An excellent, new pie size pumpkin.
- Average fruit weight is 4 to 6 lbs.
- Unique dark bright orange color.
- Very long, dark, twisting handles.
- Strong Powdery mildew resistance.
- Semi-bush plant habit.
- FarMore<sup>®</sup> treated seed and untreated seed are both available.

**NEW  
FOR  
2022**



P.O. Box 1584 | Beaver Falls, PA 15010 | 800.385.9254 | [www.outstandingseed.com](http://www.outstandingseed.com)

## NEWS

## PVGA Membership Drops to 793 - Help Us Rebuild It in 2022

PVGA membership dropped 19% to 793 in 2021, down from 983 in 2020. We assume this decline in membership was a direct result of the coronavirus pandemic. The staff and Board of Directors want to express our sincere appreciation to the members who have chosen to continue to support PVGA in 2021 when the Association's income budget dropped 65% with an extra thanks to those who gave an additional donation to bolster the funds available for research. The cancellation of the 2021 Farm Show and the in-person Mid-Atlantic Fruit and Vegetable Convention where the main causes of the decreased income for 2021.

One of the major direct benefits of PVGA membership is the discount in registration fees that is usually offered for those attending the Mid-Atlantic Fruit and Vegetable Convention. The 2021 Mid-Atlantic Convention was held virtually and registration was offered at a reduced flat rate of \$40 to encourage participation from a potentially worldwide audience so no member discount was offered. Moreover, the virtual format prevented growers without internet access from attending the Convention at all. Thus, many growers who could not take advantage of the Convention registration discount apparently chose not to renew their membership. Hopefully the return of an in-person Convention will bring back these members.

In 2017, PVGA membership reached its highest level in recent history at 1,064 members. Unfortunately, in 2018, membership dropped to 1,017, and dropped further in 2019 to 956 but rebounded to 983 in 2020. The Census of Agriculture indicates there are over 3,300 farms in Pennsylvania that grow an acre or more of vegetables. Thus, PVGA has a large potential membership as yet untapped.

The Directors have set a goal of retaining 90% of the previous year's members and recruiting 15% new members each year. For 2021 only 78% of last year's members rejoined and only 4% new members were recruited – that is they were not members in 2020. Normally, many of the new members are people attending the Convention who join to take advantage of the registration discount.

PVGA is completing its 95th year as an association. The Directors are fully aware that membership goals can only be met and maintained by providing an adequate return to members for their dues investment. The Association strove to continue to provide a good return on members' dues investment in 2021 with the following ongoing activities and member services:

- PVGA helped sponsor the virtual 2021 Mid-Atlantic Fruit and Vegetable Convention – the premier grower meeting of its kind on the east coast - and is moving forward with plans for an in-person 2022 Mid-Atlantic Convention.
- PVGA published the Pennsylvania Vegetable Growers News, its own 24-plus-page monthly newsletter with pertinent information for the Pennsylvania vegetable, potato, berry or greenhouse vegetable grower.
- PVGA produced a weekly PVGA Update email for members with email capability to keep members regularly updated about the Association as well as pertinent articles of interest on the internet.
- PVGA helped sponsor two local grower meetings in 2021 and will hopefully be able to sponsor more in 2022.
- PVGA provided \$48,281 for vegetable and small fruit research in 2021 plus \$16,000 for construction of a new research high tunnel at Penn State - bringing the Association's total for research contributions to \$1,315,500 over the last 33 years.
- PVGA represents the interests of the vegetable, potato and small fruit industries on legislative and regulatory issues through letters and meetings with public officials.
- PVGA cooperated with the Department of Agriculture and the Vegetable Marketing and Research Program to promote the Pennsylvania vegetable industry at the virtual 2020 Farm Show.

- PVGA holds the trademark for the Pennsylvania Simply Sweet Onion to help develop a profitable, branded crop for Pennsylvania growers.
- PVGA is especially proud of the volunteer effort put forth each year by PVGA members to run the Association's Food Booths at the Farm Show. While there was no food booth at the 2021 virtual Farm Show, plans are underway for the in-person 2022 Farm Show. As noted above, these efforts have enabled PVGA to donate over \$1,315,500 dollars towards research and promotion activities over the last 33 years. The Board of Directors has essentially devoted the profits from the Food Booth and the Mid-Atlantic Convention to fund the Association's research, promotion and donation budgets rather than any of the Association's general operations.

In 2020 PVGA members again received free subscriptions to the *American Vegetable Grower* magazine and the *Vegetable Growers News*.

While the 2022 Farm Show booth and the in-person 2022 Mid-Atlantic Convention will hopefully restore much of the Association's normal income, the bottom line is that your Association needs your membership for 2022 to continue to serve you and the grower community in the coming years. The Board of Directors used surpluses in past years to build a healthy general fund reserve for the Association that, along with \$8,220 in donations from members and \$19,031 in donations from the Directors, enabled it to continue operations pretty much as normal in 2021 even with the major loss of revenue – but we do need the continued support of you our members through your dues to remain a strong, viable organization in the coming years.

Dues invoices for 2022 will be mailed in early December. We hope all members will renew your memberships for 2022 and that you will urge a neighboring grower to join as well. We want to see PVGA membership rebound to its former levels and beyond. Increased membership allows the Association to better serve the vegetable, potato and berry growers of Pennsylvania – and that is our end purpose.

---

## Needed: Nominations for PVGA Directors

The terms of six members of the PVGA Board of Directors expire at the Annual Meeting scheduled for Wednesday, February 2, 2022. The Directors whose terms expire are:

William Reynolds – Waynesboro – first elected 2007

Jonathan Strite – Harrisburg – first elected 2010

Tina Forry – Palmyra – first elected 2019

Barron Hetherington – first elected 2016

Alan Kemmerer – first elected 2017

Robert Shenot – first elected 2007

All the directors are eligible for re-election. The members will elect five members to the Board and the Board will name a sixth Director. The Board was given the opportunity to appoint one of the Board members each year to provide diversity and potentially certain expertise in the Board makeup that the election process does not always provide.

The election will be conducted by a mail-in ballot that will be mailed to all members with the dues renewal notices in early December. The Leadership and Recognition Committee will be seeking additional nominees to be included on the ballot. Members who want to nominate someone for Director, or who would like to be considered, should contact the PVGA office at 717-694-3596 or [pvga@pvga.org](mailto:pvga@pvga.org) or Jon Strite, who as Past President serves as chair of the Committee, at [jstrite1979@gmail.com](mailto:jstrite1979@gmail.com).

## NEWS



**Pennsylvania  
Vegetable Growers  
Association**

*An association of  
commercial vegetable,  
potato and berry growers.*

*President*

**Brian Campbell '24**  
*Berwick*

*First Vice President*

**Rita Resick '23**  
*Somerset*

*Second Vice President*

**Peter Flynn '24**  
*West Chester*

*Secretary-Treasurer*

**William Reynolds '22**  
*Waynesboro*

*Past President*

**Jonathan Strite '22**  
*Harrisburg*

*Directors*

**Tina Forry '22**  
*Palmyra*

**Christopher Harner '23**  
*State College*

**Barron Hetherington '22**  
*Ringtown*

**Alan Kemmerer '22**  
*Berwick*

**Arthur King '24**  
*Valencia*

**Amy Metrick '24**  
*Butler*

**Michael Orzolek '24**  
*State College*

**Christopher Powell '23**  
*Strasburg*

**John Shenk '23**  
*Lititz*

**Robert Shenot '22**  
*Wexford*

**Jeffrey Stoltzfus '23**  
*Atglen*

**Mark Troyer '24**  
*Waterford*

**Joel Weaver '23**  
*Windber*

*Executive Director*  
**William Troxell**  
*Richfield*

## Be a Keystone Member for 2022 and Invest in PVGA's Future

In 1994, the Association established a new membership class, the Keystone membership, and an endowment-type fund, the Keystone Fund. PVGA members who wish to support the vegetable, potato and berry industries in a special way pay dues above the regular rate, with the dues above the regular rate being placed in the Keystone Fund. The value of the Keystone Fund balance on June 30 was \$219,320 which is invested in money market accounts, bond mutual funds and a S&P index stock fund.

The Board of Directors has approved the following uses for the annual interest earned by the Keystone Fund:

Two annual \$1,000 student scholarships that will be awarded according to set criteria by a special committee. The committee has awarded a total of 15 scholarships to date.

Half of any remaining interest is usually given to the Penn State Plant Pathology Department as a general research grant in support of the vegetable pathologist's ongoing research work.

The other half of any remaining interest is usually given to the Penn State Entomology Department as a general research grant in support of the vegetable entomologist's ongoing research work.

The special research grants from the Keystone Fund were designated for the Plant Pathology and Entomology Departments at this point in time rather than the Plant Science Department because the Association for several years gave \$10,000 a year to partially support a research technician in the Plant Science Department. This support comes from the Association's General Fund. As interest rates declined in the past several years, these research grants grew smaller but would increase again as interest rates increase. The Board decided to not distribute these research funds in 2020 but included them in the budget for future distribution.

Suggested Keystone dues are based on a member's gross income from vegetables, potatoes or berries instead of being a flat rate. However, any member who pays dues of \$75 or more is considered a Keystone member regardless of their gross income. The amount of Keystone dues paid by individual members is not pub-

lished so as not to disclose their gross income. Keystone dues above the \$50 regular dues are added to the principal of the Keystone Fund, thus increasing the potential amount of interest available each year.

Keystone membership is open to all vegetable, potato and berry farm operations, processing firms and allied industry firms. Associate Keystone Members are additional family members or employees of Keystone Members. The following farms, firms and persons are Keystone or Associate Keystone Members for 2021:

Robert Amsterdam - *Mechanicsburg*  
Baronner's Farm (Robert Baronner II) -  
*Hollidaysburg*  
Lady Moon Farms (Thomas Beddard) -  
*Chambersburg*  
Triple B Farms (R.J. and William Beinlich) -  
*Monongahela*  
Benshoff Farms of New Germany (James  
Benshoff) - *Summerhill*  
Catocoin Mountain Orchard (Robert Black) -  
*Thurmont, MD*  
Bleiler Produce Farm (Terry Bleiler) -  
*Breinigsville*  
Quality Fresh (Scot Bowman) - *Magnolia, OH*  
Burkholder's Ever Green Farm (Daniel  
Burkholder) - *Denver*  
Ruth Cantaluppi - *Selinsgrove*  
Blue Bell Fruit and Vegetable Market (Kenneth  
Dearolf, Jr.) - *New Providence*  
Dudas Farm (Roberta Dudas)- *Fairview*  
Dymond's Farm Market (Fred III, and Timothy  
Dymond) - *Dallas*  
Fred W. Eckel Sons (Keith Eckel) - *Clarks  
Summit*  
Dan Schantz Farm and Greenhouse (Patrick  
Flanley, Daniel Schantz) - *Zionsville*  
Douds Floyd Farm (Philip Doud Floyd) *Aliquippa*  
Pete's Produce Farm (Peter Flynn) - *West  
Chester*  
Ehco Hill Farms (John Gage) - *Cranesville*  
New Morning Farm (Jennifer Glenister) -  
*Hustontown*  
Halsey Farm & Nursery (Adam Halsey) - *Water  
Mill NY*

*Continued on page 6*

The **Pennsylvania Vegetable Growers News** is the official monthly publication of the  
Pennsylvania Vegetable Growers Association, Inc.,  
815 Middle Road, Richfield, PA 17086-9205

Phone and fax: 717-694-3596 • Email: [pvga@pvga.org](mailto:pvga@pvga.org) • Website: [www.pvga.org](http://www.pvga.org)

### **Our Mission:**

The Pennsylvania Vegetable Growers Association serves Pennsylvania's commercial vegetable, potato and berry growers through education, research, advocacy and promotion.

### **Our Vision:**

The Pennsylvania Vegetable Growers Association will be the driving force in ensuring the future viability of the commercial vegetable, potato and berry industries in Pennsylvania.

Inquiries about membership, this publication or advertising rates should be directed to William Troxell, Executive Director, at the above address.

# BiO 360

Biodegradable | Compostable Mulch Film



Made from Mater-Bi



BPI Certification



No negative impact on soil



Suitable for many types of crops



Several thicknesses available



Sustainably produced



Nolt's Produce Supplies  
717-656-9764 - Leola, PA  
noltsproducesupplies.net  
For other regions, contact us  
1-844-4BIO360 (1-844-424-6360)



## NEWS

# Fruit + Vegetable 40 UNDER FORTY

## RECOGNIZING THE FRUIT + VEGETABLE INDUSTRY'S NEXT GENERATION OF LEADERS

The Fruit + Vegetable 40 Under 40 Awards honor 40 outstanding individuals making their marks in the industry. These 40 young professionals represent the best in the industry. The Fruit + Vegetable 40 Under 40 Class of 2021 will be honored at the Great Lakes Fruit, Vegetable & Farm Market EXPO, and recognized in the October 2021 issues of Fruit Growers News and Vegetable Growers News.

The Vegetable Growers News and the Fruit Grower News organizes the 40 Under 40 recognition program that is sponsored by Corteva Agriscience, Stokes Seeds, FMC Corporation, BioWorks, and AgBiome Innovations. The following two individuals from Pennsylvania were included in this year's class of winners.



Steven Janoski, Crop Production Supervisor, Janoski Farms Inc.

Steven Janoski is a fourth-generation fruit and vegetable farmer in Clinton, Pennsylvania. The family owned Janoski Farms grows on over 250 acres of land and in 2 acres of greenhouses. Steven oversees seed starting, produce processing/packing, wholesale clients and crop production management. He also oversees their stand at a local Farmer's Market where quality, presentation and customer satisfaction are priorities to him and his employees.



Ben Rice  
President, Rice Fruit Company

Ben Rice is the President of Rice Fruit Company, a packer, marketer, and shipper of whole, fresh apples in Adams County, Pennsylvania, where his family has been in the apple business for eight generations. He holds a BA from Princeton University and an MBA from Penn State. He has served on the PA Apple Marketing Board, the State Horticultural Association of PA research committee, and often participates as an invited speaker at numerous trade events.

## PVGA Young Grower Award Applications Being Accepted

The "PVGA Young Grower" award was an award established five years ago. Brandon Christner was the first recipient at the 2017 Mid-Atlantic Convention and Peter Salerno III was the recipient at the 2018 Convention. Unfortunately, there were no nominees for 2019 but in 2020 two young growers were recognized: Wesley Nell and Nick Lubecki. Wyatt Schriver won the award for 2021.

The winner is chosen each year by the PVGA Leadership and Recognition Committee. PVGA members are asked to nominate a young grower (someone they know or themselves) who meets the following criteria for the Award:

- is a PVGA Member who is 35 years old or younger;
- is successfully growing vegetables, potatoes or berries; and
- has contributed to advancing or promoting the Pennsylvania vegetable, potato or berry industry.

The prize for the winner will be free registration and lodging for the Mid-Atlantic Fruit and Vegetable Convention. To nominate someone or yourself, send a brief but comprehensive description of the farm operation and the nominee's qualifications to PVGA at [pvga@pvga.org](mailto:pvga@pvga.org) or 815 Middle Road, Richfield, PA 17086, by November 30, 2021.

## Be a Keystone Member for 2022 and Invest in PVGA's Future

*continued from page 4*

Harnish Farms (Bryan Harnish) -- *Pequea*  
 SIW Vegetables (Harry Haskell) -- *Chadds Ford*  
 Titus Hershberger -- *Glen Rock*  
 B & R Farms (Barron Hetherington) -- *Ringtown*  
 Outstanding Seed Co. (Jamie Hoffman) -- *Beaver Falls*  
 Broken Willow Farm - Norman M Hoover - *Leola*  
 Hopkin's Farm (Andrew and William Hopkins) *Falls*  
 Bendal's Berry Patch -- Donald J Horner - *Tionesta*  
 Joel Horst -- *New Holland*  
 Bridge Avenue Berries -- (Harry and Susan Jones) - *Allenwood*  
 Harvest Valley Farms (Arthur, David and Larry King and Margaret Wells) -- *Valencia*  
 Peaceful Acres Farms (Clair King) -- *Cochranville*  
 Kings Sweet Corn & Produce -- (David and Kathy King) - *Atglen*  
 Kings Potatoes (Gerald King) -- *Cochranville*  
 Melvin King Fresh Produce -- (Melvin King) - *Leola*  
 Kneisley Family Farm -- (Jay Kneisley) - *Willow Street*  
 Kreider's Market (J. Lloyd Krieder) -- *Kirkwood*  
 Kitchen Table Consultants (Ted Lebow) -- *Bala Cynwyd*  
 Sang Lee Farms -- (Fred Lee) -- *Peconic NY*  
 PA Co Op Potato Growers -- (Robert Leiby) - *Kutztown*  
 Cross the Creek Farm -- (Erica Lloyd) -- *Newville*  
 Udder Merry Mac Farm -- (Raymond Macwhinnie) -- *Ulster*  
 Marlerba's Farm -- (Vincent Malerba) -- *Norwich CT*  
 Maplewood Farm Market -- (Reuben R Martin) -- *Shippensburg*  
 Mason Farms -- (John Mason) -- *Lake City*  
 E & R Mathez Farm -- (Rene Mathez) -- *Columbia NJ*  
 Harvest View Farm and Market (Amy and Kenneth Metrick and Laura Palmer) -- *Butler*  
 Miller Plant Farm (David Miller) -- *York*  
 Keith Moyer -- *Middleburg*  
 General Store Farm Market (David Moyer) -- *Birdsboro*  
 Walnut Run Farm -- (Carl G Myer) -- *Lititz*  
 Daniel's Farm Store -- (Amos Nolt) -- *Leola*

*Continued on page 10*

## NEWS

## Farm Bureau Testimony on State Tax Reform

Darrin Youker

The vast majority of Pennsylvania farms are family-owned. Even farms that are registered as limited liability corporations are still family-controlled. Most Pennsylvania farms are operated as sole proprietorships, so small business tax reform is a key policy issue for our organization.

I also think it is worth noting that farms have a fundamentally different business model than most other businesses. It helps explain why Farm Bureau advocates for certain tax and regulatory changes. Farmers are the only business that cannot pass on the cost of production to the market place. The price that farmers receive for the products, from apples to zucchini, are set by the market place. That price does not factor in how much it cost a farmer to raise that crop. Any farmer that sells product on the wholesale market cannot pass on their cost of production. Farmers are price takers, not price makers. As President John F. Kennedy famously said, "The farmer is the only man in our economy who buys everything at retail, sells everything at wholesale, and pays the freight both ways."

Broadly speaking, our approach to tax policy is to identify areas where small business owners can take advantage of tax strategies that are provided to registered corporations. Additionally, we seek uniformity between federal and state tax policy. The lack of uniformity presents confusion to small business owners. State legislation that we will discuss here accomplishes both of those public policy goals.

Pennsylvania Farm Bureau is supportive of the small business tax reform package introduced by Representatives Jim Cox, Seth Grove and Eric Nelson. This three-bill package gives small business owners many of the same tax flexibility provided to corporations and creates uniformity between federal and state tax policy. In addition, these three bills will provide farmers with a workable tax policy that gives them additional tools and resources as they reinvest in their businesses.

House Bill 333 would allow small businesses to deduct a greater amount of depreciation for equipment and machinery purchases. Changes made by the federal government in 2017 gave small businesses the ability to deduct the full purchase price of equipment up to \$1 million, and then phasing out those deductions for equipment over \$2.5 million. These deductions are not tax cuts, but instead reduces the value of an assets over its useful life. Pennsylvania corporations are given the ability to use the full deduction allowed under IRS regulations, but small businesses are capped at

\$25,000.

Farming is a capital-intensive enterprise. Outside of the cost of land, equipment costs are often the most expensive aspect of an agriculture operation. For instance, modern farm equipment used for the planting and harvesting of crops can cost more than \$400,000. The ability to deduct a higher amount of those purchase through Section 179 would help farmers with those capital-intensive investments and encourage future purchases. Farm income, by nature, is cyclical so in years of profitable returns, farmers often purchase needed implements and supplies in that same tax year to offset their income liability. That strategy is often used when purchasing seed and fertilizer, but having greater access to deductions under Section 179 would likely encourage the purchase of those more capital-intensive pieces of machinery. In addition, the cyclical nature of farm income is one reason that net loss deduction being made available to small businesses would help our state's farm families. We are supportive of House Bill 395 to give small business owners the ability to use this tax strategy.

Additionally, House Bill 105 would give small businesses owners the ability to use like-kind exchanges—which is currently allowed at the federal level. Unfortunately, Pennsylvania has the distinction of being the only state in the country that does not give small business owners the ability to use this tax strategy. For instance, some farmers have used this tax strategy when preserving their farms through the state's farmland preservation program. Enrolling in that program generates a payment from the state to the farmer. To help offset their tax liability, farmers have purchased similar property and used like-kind exchanges when filing their federal taxes. Adopting House Bill 105 again creates a level of uniformity with existing federal tax policy.

Relatedly, we are also supporting House Bill 199, introduced by Rep. George Dunbar, that would align our state tax law with current IRS standards when calculating the depletion of natural gas wells. Landowners who have natural gas wells, or other natural deposits like timber, on their property can deduct the natural depletion of those resources. The IRS gives landowners two methods to calculate the value of those deductions—the percent depletion method and the cost-depletion method. Currently, Pennsylvania only allows landowners to use the cost-depletion method on state income tax returns. Most Pennsylvania landowners lack the docu-

*Continued on page 8*

**75TH ANNIVERSARY**  
**Fertrell**  
 SINCE 1946  
 Better Naturally!

**SOIL MINERALIZER PLUS**  
**GET A JUMP START ON NEXT YEAR!**

**\*10% off for orders placed during October**

- **Sets your table for success in the growing season**
- **Prepares perennial crops for dormant season**
- **Helps prolong duration of nutrient release**
- **Increases biological activity in the soil**
  - **Aids in crop residue digestion**
  - **Winterizes perennial crops**

**Available in 50 lb. paper bags, 1000 lb. and 2000 lb. totes, as well as loose bulk.**

**Contact a local Fertrell Representative through our online locator at [www.fertrell.com](http://www.fertrell.com) or Fertrell's main office at 800-347-1566 \*Restrictions apply**

## NEWS

## National News Briefs

### Pandemic Response and Safety Grants Available to Small Producers and Farmers Markets

The U.S. Department of Agriculture (USDA) today announced a Request for Applications (RFA) (<https://www.grants.gov/web/grants/view-opportunity.html?oppld=335320>) for the new Pandemic Response and Safety (PRS) Grant program and encourages eligible entities to apply now for funds. Applications must be submitted electronically through the grant portal at <https://usda-prs.grantsolutions.gov/usda> by 11:59 p.m. Eastern Time on Monday, November 22, 2021. Approximately \$650 million in funding is available for the PRS grants, which are funded by the Pandemic Assistance provided in the Consolidated Appropriations Act of 2021.

The PRS Grant program will assist small businesses in certain commodity areas, including specialty crop producers, shellfish farming, finfish farming, aquaculture, and apiculture; specialty crop, meat, and other processors; distributors; and farmers markets. Small businesses and nonprofits in these industries can apply for a grant to cover COVID-related expenses such as workplace safety measures (e.g., personal protective equipment (PPE), retrofitting facilities for worker and consumer safety, shifting to online sales platforms, transportation, worker housing, and medical costs. The minimum funding request is \$1,500 and the maximum funding request is \$20,000.

The RFA and the PRS Grant Portal provide more details about eligibility for the grant. Eligible entities are required to obtain a free DUNS Number from Dun & Bradstreet (D&B) before applying for this program. USDA has created a custom PRS DUNS number portal at <https://support.dnb.com/?CUST=PandemicResponse>.

Application resources, including Frequently Asked Questions (FAQs), tip sheets in English and Spanish on applying for a DUNS Number, videos on “How to Apply” and more, are available on the PRS Grant Portal.

For more information, you can also reach out to the PRS help desk, Monday-Friday, 9 a.m.–9 p.m. ET at (301) 238-5550 or [usda.ams.prs@grantsolutions.gov](mailto:usda.ams.prs@grantsolutions.gov).

Check your eligibility, obtain a DUNS number, and learn more about the application process at the PRS Grant Portal.

### USDA Introduces New Insurance Policy for Farmers Who Sell Locally

The U.S. Department of Agriculture (USDA) is rolling out a new insurance option specifically for agricultural producers with

small farms who sell locally. The new Micro Farm policy simplifies record keeping and covers post-production costs like washing and value-added products.

USDA's Risk Management Agency (RMA) created this new policy based on research directed by the 2018 Farm Bill, and it includes feedback from producers who grow for their local communities. The policy will be available beginning with the 2022 crop year.

“We are excited to offer this new coverage for producers who work to provide their communities with fresh and healthy food,” said RMA Acting Administrator Richard Flournoy. “USDA is focused on supporting local and regional food systems, and this new crop insurance policy is designed with this important sector of agriculture in mind.”

The new policy is offered through Whole-Farm Revenue Protection (WFRP) and it has distinct provisions that can provide more access to the program, including:

No expense or individual commodity reporting needed, simplifying the recordkeeping requirements for producers

Revenue from post-production costs, such as washing and packaging commodities and value-added products, are considered allowable revenue

The Micro Farm policy is available to producers who have a farm operation that earns an average allowable revenue of \$100,000 or less, or for carryover insureds, an average allowable revenue of \$125,000 or less. RMA's research showed that 85% of producers who sell locally reported they made less than \$75,000 in gross sales. See the full report at <https://www.rma.usda.gov/-/media/RMA/Specialty-Crops/Feasibility-of-Insuring-Local-Food-Production.ashx?la=en>

The Micro Farm policy builds on other RMA efforts to better serve specialty and organic crop growers. This includes WFRP, which provides coverage for producers with larger operations that may not be eligible for Micro Farm. RMA recently made improvements to WFRP as part of a broader set of new policies and expanded policies to assist specialty crop and organic producers.

The Federal Crop Insurance Corporation approved the Micro Farm policy in late September, and additional details will be provided later this fall.

Crop insurance is sold and delivered solely through private crop insurance agents. A list of crop insurance agents is available at all USDA Service Centers and online at the RMA Agent Locator. Learn more about crop insurance and the modern farm safety net at [rma.usda.gov](http://rma.usda.gov).

## Farm Bureau Testimony on State Tax Reform *continued from page 7*

mentation needed to use the cost-depletion method. In order to use this method, a landowner must have established the value of the asset (like a gas well) at the time the property was purchased. So for landowners who purchased their property before they ever signed an oil and gas lease, they cannot use the cost-depletion method for deductions. This is especially true for lands in the Marcellus Shale formations—as landowners were unaware there was gas reserves of significant value under their property. For this reason, the IRS allows landowners to use the percent depletion method, that allows landowners to deduct a certain percentage. However, our state does not give that same level of flexibility, leaving landowners with no meaningful way to use this tax strategy.

Lastly, I do want to highlight House Bill 390, which is in the House Labor and Industry Committee as it is another example of legislation that addresses tax uniformity. HB 390 would give farmers the ability to avoid paying unemployment compensation taxes for workers who are hired through the federal H-2A immigration system. The H-2A system is used by farmers to supply temporary for-

eign work for farm tasks—often the harvesting of seasonal crops—in cases where the farmer was unable to find local workers. Under the H-2A system, these workers come to our country, work for one particular farm, and then return to their home country. They are unable to collect unemployment by the nature of their employment contract. The federal government gives farmers an exemption from paying unemployment taxes for these workers, and roughly half of the states provides similar exemptions. Pennsylvania does not. We view HB 390 as another way to align state and federal tax policy. It would not take away a benefit from any worker, but would instead give farmers the ability to reinvest that tax obligation back into their business. While this legislation is not in the Finance Committee, it is our hope that it becomes part of an overall legislative tax package that brings relief to our small business owners.

*Mr. Youker is the Director of State Government Affairs for the Pennsylvania Farm Bureau. From Penna. Farm Bureau, <https://pfb.com/testimony-on-tax-reform/>*

**NEWS**

**National News Briefs** *continued from page 8*

**RMA Makes Improvements to Whole-Farm Revenue Protection**

Organic and aquaculture producers can soon benefit from updates to the U.S. Department of Agriculture’s (USDA) Whole-Farm Revenue Protection (WFRP) plan. USDA’s Risk Management Agency (RMA) is revising the plan of insurance to make it more flexible and accessible to producers beginning in crop year 2022.

“These improvements to the Whole-Farm Revenue Protection program will make it a better risk management tool for producers,” said RMA Acting Administrator Richard Flournoy. “USDA is committed to equity in program delivery, and this includes specialty crop, organic, and aquaculture producers, who will benefit from these enhancements to WFRP.”

Changes to WFRP include:

- Increasing expansion limits for organic producers to the higher of \$500,000 or 35 percent. Previously, small and medium size organic operations were held to the same 35 percent limit to expansion as conventional practice producers.
- Increasing the limit of insurance for aquaculture producers to \$8.5 million. Previously aquaculture producers were held to a \$2 million cap on expected revenue, this change allows more aquaculture producers to participate in the program.
- Allowing a producer to report acreage as certified organic, or as acreage in transition to organic, when the producer has requested an organic certification by the acreage reporting date. This allows organic producers more flexibility when reporting certified acreage.
- Providing flexibility to report a partial yield history for producers lacking records by inserting zero yields for missing years. Previously, missing a year of records would cause the commodity’s expected value to be zero, meaning past revenue from the commodity would contribute nothing to the insurance guarantee.

WFRP provides a risk management safety net for all commodities on the farm under one insurance policy and is available in all counties nationwide. Producers purchased more than 2,000 policies to protect \$2.26 billion in liabilities in 2020.

This insurance plan is tailored for any farm with up to \$8.5 million in insured revenue, including farms with specialty or organic commodities (both crops and livestock), or those marketing to local, regional, farm-identity preserved, specialty, or direct markets.

Crop insurance is sold and delivered solely through private crop insurance agents. A list of crop insurance agents is available at all USDA Service Centers and online at the RMA Agent Locator - <https://www.rma.usda.gov/en/Information-Tools/Agent-Locator-Page>. Learn more about crop insurance and the modern farm safety net at [rma.usda.gov](http://rma.usda.gov).

**Continuing Resolution Extends Disaster Coverage for Most 2020 and 2021 Losses**

An AFBF analysis of the recent extension of disaster assistance and associated coverage for additional weather-related conditions revealed welcome news for farmers recovering from 2020 and 2021 disasters.

President Joe Biden recently signed into law H.R. 5305, the Extending Government Funding and Delivering Emergency Assistance Act, commonly known as the continuing resolution (CR). The CR retroactively extended disaster assistance programs through 2020 and 2021 and appropriates \$10 billion to the office of the Secretary of Agriculture for these programs, including the Wildfire and Hurricane Indemnity Program Plus (WHIP+), the On-Farm Storage Loss Program, Milk Loss Program and Tree Assistance Program.

Per the AFBF analysis, the \$10 billion surpasses uncovered crop loss estimates, though final 2021 impacts remain unassessed.

WHIP+ provides financial assistance for crop losses related to natural disasters. The CR reiterated that previously covered conditions such as excessive heat and excessive moisture, hurricanes and wildfires would continue to qualify for assistance. It also explicitly includes derechos, winter storms, polar vortices, freeze, smoke exposure and quality losses for crops as covered causes.

The CR retains existing payment limitations from WHIP+ that restricted producers to \$125,000 for the 2018, 2019 and 2020 crop years if their average adjusted gross farm income (AGI) was less than 75% of their adjusted gross income for 2015, 2016 and 2017. If 75% of a producer’s AGI was received from ranching, farming or forestry, up to \$250,000 could be received in WHIP+ payments, with a total combined payment limitation of \$500,000.

*From Penna. Farm Bureau, <https://pfb.com/continuing-resolution-extends-disaster-coverage-for-most-2020-and-2021-losses/>*

**Hillside Cultivator Co. LLC**



**Hydraulic adjusted cultivator** for the edges of plastic mulch



**Cultivators especially for Strawberries**



**Eco Weeder** for close cultivation around individual plants

*For more information visit [hillsidecultivator.com](http://hillsidecultivator.com)*

*Contact: John Shenk 717-669-3158 Lititz, PA [hillsidecultivator@gmail.com](mailto:hillsidecultivator@gmail.com)*

## NEWS

## State News Briefs

### Ask Your Senator to Support the Agricultural Conservation Assistance Program

Numerous agriculture and conservation groups are supporting an effort that would increase the number of best-management-practices installed on Pennsylvania farms.

The Agricultural Conservation Assistance Program would drive funding throughout the state, using a formula that prioritizes the areas of greatest need. It would give county Conservation Districts the flexibility to fund practices that meet the needs of farmers and landowners in their area. County Conservation Districts will be in the driver's seat to establish criteria and identify landowners who want to make conservation improvements on their farm.

Please urge your state senator to support important legislation for the creation of the Agricultural Conservation Assistance Program, which will encourage new investment in on-farm conservation.

Senate Bill 465 would create a framework that would provide county Conservation Districts with a predictable source of funding each year that would be used to help pay for best management practices that improve local water quality. This program is based on the state's Dirt and Gravel Road program—which has a demonstrated record of delivering effective results at reducing the negative impacts that sediment from dirt roads has on creeks and streams. By creating a program that allocates annual funding to conservation districts, we can help farmers across the state install best-management-practices that will reduce the amount of nutrients from reaching local waterways and improve soil health.

Numerous agriculture and conservation groups are supporting an effort that would increase the number of best-management-practices installed on Pennsylvania farms. The Agricultural Conservation Assistance Program would drive funding throughout the state, using a formula that prioritizes areas of greatest need. It would give county Conservation Districts the flexibility to fund practices that meet the needs of farmers and landowners in their area. County Conservation districts will be in the driver's seat to establish criteria and identify landowners who want to make conservation improvements on their farm.

These efforts will improve local water quality—which will trickle down to larger watersheds. Creating a program like the Agricultural Conservation Assistance Program will address the state's unmet needs in the Chesapeake Bay Watershed, such as meeting goals to reduce the level of nutrients. By working on a

program that encourages voluntary compliance, it will potentially help Pennsylvania avoid punitive measures from the federal government. In short, the more that Pennsylvania can demonstrate a level of investment in water quality funding, the better the state's chances of avoiding forced compliance.

In addition, this program will help build on the excellent foundation that Pennsylvania farmers have built for conservation. Funding will help farmers pay for practices that they might not be able to afford out of pocket, but want to for the long-term future of their farm.

Senate Bill 465 has been approved by the Senate Agriculture & Rural Affairs Committee and is now facing a vote by the full Senate. We need to show Senators that Pennsylvanians support the creation of this program and that it needs to be a legislative priority. Please contact your Senator and urge their strong support for Senate Bill 465.

If you need contact information for your state senator, go to <https://www.pasen.gov/index.cfm> or call PVGA at 717-694-3596.

From Penna. Farm Bureau, <https://pfb.com/advocate-for-policies/actnow/?vsrc=%2fcampaigns%2f87259%2frespond>.

### Penn State Law's Rural Economic Development Clinic Offers Free Legal Help

Client applications are currently being accepted for Penn State Law's Rural Economic Development Clinic, a clinic course for law students. Through the course, enrolled students get experience doing legal work for clients, under the supervision of the Center for Agricultural and Shale Law's attorneys, while clients get free legal help.

The Center is soliciting for clients who wish to receive legal help in two areas: review of solar leases and liability waiver agreements under Pennsylvania's new agritourism activity protection act.

If you wish to apply to be served by the clinic in October and November 2021, apply as soon as possible at <https://aglaw.psu.edu/legal-clinic/> and submit the CLIENT APPLICATION.

Acceptance of clients for the clinic's work is always subject to the Center's discretion, case load and capacity at any given time.

From Penna. Farm Bureau, <https://pfb.com/penn-state-laws-rural-economic-development-clinic-offers-free-legal-help/>

## Be a Keystone Member for 2022 and Invest in PVGA's Future

*continued from page 7*

Hilltop Berry Farm – (Benjamin, Ryan, Robert, Steve and Tim Osborne) – *New Milford*

Institute for Plant Based Nutrition (James Oswald) – *Bala Cynwyd*

Palmer's Farm – (Neil Palmer) – *Greensburg*

Peters Produce (Dennis Peters) – *Red Lion*

Nells Venture – (Herbert Pollock) – *Indiana*

Rimol Greenhouse Systems – (Bob Rimol) – *Hooksett NJ*

Robertson Farms (Gregg Robertson) – *Hershey*

Pumpkinhill Produce Farms (Harry Roinick, Jr.) – *Nescopeck*

Red Wagon Farm – (Eric Ross) – *Columbia Station OH*

Sample's Vegetable Farm (Steve Sample) – *Duncannon*

Gardenspot Greenhouse – (Amos Sauder) – *New Holland*

Jim's Farm Produce (James and Jason Schirg) -- *West Abington Twp.*

Justin Schmidt – *Elkton VA*

Shenot Farms (Edward and Robert Shenot) – *Wexford*

Stauffer Huling Farm – *Sandford, FL*

Hilltop Farm Market (Nathan Stock) – *East Berlin*

Allan Stombaugh – *Duncansville*

AgraPro by MSA (Mark Swingle) – *Lawrence, NJ*

William Troxell – *Richfield*

Troyer Land Resources – (Kevin Troyer) – *Waterford*

Varner Farms (Robert D. Varner) – *Montoursville*

GENERAL

# Cover Crop Mixes – Is More Better?

Becky Maden and Caleb Goossen

We are all familiar with the benefits of combining winter rye with hairy vetch, or oats with field peas: the legume fixes nitrogen, while the grass adds biomass (carbon), suppresses weeds, and acts as a “nurse crop” for the legume, and you get the benefits from both species at the same time. So what happens if you add more species to this mix? Do the benefits multiply?

It’s important to weigh the costs and benefits of a diverse mix of cover crops, especially when you’re considering purchasing pre-mixed, commercial blends that can be quite expensive. There are some obvious benefits to planting a diverse mixture of cover crop species. Namely, if you plant many species, at least one of the species should perform at least okay for you, regardless of the land’s specific conditions and the weather. Another benefit is the opportunity to trial cover crop species that you may not have had the courage to purchase by themselves. These benefits can be achieved with a premixed blend or simply by pouring together whatever leftover seed you have kicking around, planting it, and just witnessing what does well. However, sometimes the benefits of a pre-mixed cover crop “cocktail” may not justify the additional cost, relative to a simple or self-made mix which might meet your needs just as well.

You can consider each cover crop species that you utilize in a mix as an investment, and the benefits that your land and the broader environment receive from each species as your return on that investment. It’s clear to see that moving from zero cover cropping to planting one cover crop species is a huge jump in the benefits to your farm. For example, planting oats alone will reduce soil erosion, add biomass, and provide some weed sup-

pression. Adding a second species with different characteristics will likewise give you an easily noticed return on your investment. For example, adding peas to your oat cover crop will give you the added benefit of nitrogen fixation. However, the peas don’t add much of a benefit in terms of biomass created, because oats produce plenty of biomass on their own.

Adding a third or fourth species can provide other benefits beyond those provided by the peas and oats—for example, tillage radish (aka daikon) will break up soil compaction with its deep tap roots, and buckwheat will establish quickly and shade out weeds. However, as you add more and more species to your mix, the return on your investment per species becomes smaller and smaller. In other words, the benefits gained by planting a 4-species mix may not be much higher than what you gain by planting a 2-species mix. This is partially because many of the benefits of cover cropping are a result of simply having any plant in the ground (e.g. erosion control, biomass creation, living roots in the soil). Those benefits are fully provided by the first few species planted and the effects do not increase with additional species. Additionally, as you increase the number of species in a mix, each species becomes “diluted”, along with the benefits that that species offers. This declining overall return on investment likely isn’t very noticeable with just 3 species, **but the marginal gains that each new species adds to the overall benefits of your cover crop planting will continue to be harder to observe.** That said, this isn’t meant to discourage anyone from experimenting with or regularly using big, diverse cover crop mixes—have fun with your cover cropping, whatever that means to you!

*Continued on page 12*

**ProducePackaging.com<sup>®</sup>**  
*for all your produce packaging needs*

**1-800-644-8729**  
Kurt Zuhlke & Assoc., Inc.  
P.O. Box 609, Bangor, PA 18013



*Over 45 Years In The Industry*

For over 45 years, Kurt Zuhlke & Assoc., Inc. has been a part of the many innovative packaging concepts utilized by the produce industry.



*High Quality Products And Services*

Our packaging is designed to protect produce, provide excellent visibility to the consumer, reduce shrinkage and enhance the product. We also offer professional labeling design and application.



*From Farmers To Repackers*

Whether you are ordering a case or a truck load, you can rest assured that we have the ability and capacity to service your orders quickly.



## GENERAL

## Cover Crop Mixes – Is More Better?

continued from page 11



This commercial cover crop mix was comprised of many species, including sunflower, tillage radish, buckwheat, sudangrass, and more. However, the tillage radish dominated (and went to seed!), significantly diluting the effects of the other species. Photo: C. Goossen



This 3-species mixture of rye, vetch, and tillage radish is more balanced, with no one species dominating. Photo K. Campbell-Nelson



This red clover stand is a result of seeding oats, peas, and clover in the spring, then mowing the oats and peas at maturity to allow the clover to take over. The fast-growing oats and peas acted as nurse crops to the slow-growing clover, which will now overwinter. Photo: G. Higgins

**Cover crop growth period.** In terms of planting, there are some fundamentals of establishing the mixtures that you'll want to follow. Carefully consider the growth period for the mix: Is this a multi season mix? Do you need to plant a cash crop early the following spring? Can the subsequent cash crop tolerate high residue? Is your next crop a heavy feeder? Was the field weedy the previous season? Consider staggering the benefits of your cover crop mix. For instance, a summer-planted mix with sorghum sudangrass, Japanese millet, and red clover builds biomass from the grass during the first summer, but once the grasses are mowed and winter-killed, the nitrogen-fixing red clover becomes dominant in the spring. Alternatively, you might choose to plant a mix that matures and is terminated all at the same time, like a fall-planted rye (or wheat, or triticale) and vetch mix. If you are new to cover crop mixes, long rotations are often easiest to play with, giving you more time between cash crops to allow cover crops to become established and for management practices to take place. Long rotations are particularly beneficial when using a mix of short- and long-lived species. Fast-growing annual species establish quickly and can act as a nurse crop for long-lived species that often have small seeds and are slow to establish, provided that the annuals aren't so competitive that they shade out the longer-lived species.

**Seeding rates and depth.** For seeding, the general rule of thumb is to keep legume seeding rates the same as if planting them by themselves, but reducing grass seeding rates to 50-75% of their individual seeding rate. Ideally, you would seed each species in the mix at the correct depth for that seed type to ensure good germination rates, but this may be difficult with your equipment or on your scale. You can shoot for the average depth for the species in the mix, or you could split the seed mix into a large seed and small seed batches and make two passes. Another strategy is to seed species in separate, neighboring rows. Very small seeds like clover can even be broadcast before a good rain. Another way to plant cover crop mixes is to temporally separate your seeding dates. For instance, some growers utilize frost seeding (broadcast seeding onto soil that is undergoing freeze-thaw cycles, so that the seed "self-incorporates" into the cracking soil) to establish red clover in a field of winter rye. Once the rye is mature in the spring, it can be harvested for straw, leaving behind an established understory of clover. This clover can provide an incredible amount of nitrogen for a late-summer cash crop. Note that a mix of seed types might self-separate by size, with smaller seeds falling to the bottom, so frequent mixing may be advisable.

So have fun out there—mix it up! If you want to play with simple cover crop mixes, or complicated ones, you can start with MOFGA's Using Green Manures at <https://www.mofga.org/resources/cover-crops/using-green-manures/>, Penn State's Making the Most of Mixtures Guide at [https://mccc.msu.edu/wp-content/uploads/2017/02/PA\\_2015\\_Making-the-Most-of-Mixtures.pdf](https://mccc.msu.edu/wp-content/uploads/2017/02/PA_2015_Making-the-Most-of-Mixtures.pdf) or the great SARE publication Managing Cover Crops Profitably <https://www.sare.org/resources/managing-cover-crops-profitably-3rd-edition/>. You can also explore the user-friendly cover crop decision tools put together by the Northeast Cover Crops Council at <https://northeastcovercrops.com/decision-tool/>.

There is a fantastic SARE presentation on cover crop cocktails by Penn State's Mitch Hunter and Charlie White that can be found at: <https://www.sare.org/resources/cover-crop-cocktails/>.

Ms. Maden is with the Univ. of Vermont Extension and Dr. Goossen is with the Maine Organic Farming and Gardening Association. From the **Vegetable Notes for Vegetable Farmers in Massachusetts**, Univ. of Massachusetts Extension, Vol. 33, No. 24, October 7, 2021.

[www.pirrunginc.com](http://www.pirrunginc.com)

**“THE LARGEST EAST COAST AUCTION EVER”  
VEGETABLE AND GRAIN FARMING LINE**

**TWO CONSECUTIVE DAYS!!**

**SATURDAY DECEMBER 11 @ 9:00 A.M. AND 10:00 A.M.**

**SUNDAY DECEMBER 12 @ 10:00 A.M.**

**SWEDESBORO (GLOUCESTER CO.) NEW JERSEY USA**

Owners retiring from multi-generation farm converting to huge commercial agri-business operation, selling will be! (A Sampling Follows!)

**2018 JD 9520R**, E-18 power shift; **JD 8370R**, MFWD, IVT trans.; (SEE other tractors on web!)

**2020 (new this year!) CIH Magnum 250** Cut-ATS C (250 h.p.) only 50 hrs!;

**2018 Ramsey Highlander** Self Propelled harvest (box or bulk) aid telescoping two belt system complete with 5th wheel transport cart!; **2019 NH SP310F** self propelled Sprayer, 60-90 ft. booms, auto steer, 1200 gal.;

**2018 JD 1795** Exact Emerge no till 12 row corn/bean planter, deluxe!!; **CIH 8230 AFS** (4WD) Combine, auto steer, etc.!; **Geringhoff** 12 row rota disc chopping head; **Mac Don FD755** 35 ft. flex draper head; **J&M 750** grain cart;

**Tractors:** 6130R; (5) 5075E; 6230; (2) 6105M; 5525; (4) 6620; 5500; (2) 2640; **PLUS Thirty (30) More Tractors!!;**

**Landoll 7530VT** 29 ft. vertical till tool, deluxe! **Forigo (new) G45-450** 15 ft. 3 row vegetable bedding machine; **JD 2630** TruSet 30 ft. cushion gang disk; **Krause** 35 ft. “Landsman”; **JD 995** 8-b. Para-Plow with sterling plow packer; **Unverferth 3755XL** seed tender;

**BIG Line of Vegetable Planting/Harvest and Crop Care Including: Checchi Magli** 6-row planter (2-3 row on 5 ft. centers); 1200 Plus **#26 Macro bins**; Four (4) Packing Lines (All Food Safe): Big 60 in. general purpose line!; S.S. Asparagus line; Squash line; Peach line; Soils Equipment; Six Deluxe “Gray Hawk” (Canada) 30x300 ft. greenhouses; LP Forklifts;

**Four (4) Truck Tractors; 1991 Rogers** 65 ton lowboy; Four (4) dump trailers; Seven (7) reefers;

**See webpage (www.pirrunginc.com)** for complete list and pictures as available including video of working NH sprayer and Ramsey Highlander! Daily Pay Terms! See Conditions of Sale!

**NOTE:** Well maintained family owned equipment. All in use up to end of 2021 season!

**Saturday Sale** is Tractors/Trucks/Field Machinery. **Sunday Sale** is Greenhouses/Packing Lines and Warehouse Type Equipment!

**SEE FULL List (pictures when available), Daily Terms of Sale and Updates on Webpage:**

[www.pirrunginc.com](http://www.pirrunginc.com)

**PIRRUNG AUCTIONEERS, INC.**

**585-728-2520**

**Email: [PirrungAuctioneers@frontier.com](mailto:PirrungAuctioneers@frontier.com)**

## GENERAL

## Herbicide Storage Over the Winter

Consider storage options before purchasing bulk volumes of herbicides and other pesticides this fall.

With volatile supply chain issues involving many aspects of production ag these days, some are asking if it is wise to purchase bulk inventory of herbicides and/or other pesticides. The short answer is yes, it would be a good idea to start making purchases on some of these inputs. The intent is not to hoard products but to have a modest supply for use during the next growing season. However, you must keep in mind appropriate storage parameters, namely issues regarding freezing of pesticide products during the winter months. In general, freezing temperatures can change and negatively affect the chemistry of some pesticides inside the container and can also damage the container itself. Make sure to read the label for storage instructions. But as a rule, pesticides are best stored between 40-90 °F. For more details and many useful links, please refer to the National Pesticide Information Center's webpage at <http://npic.orst.edu/health/storage.html> about pesticide storage considerations. North Dakota State University has compiled the table below of recommended minimum storage temperatures for various herbicides. Another good article about temperature effects during storage, from the University of Missouri, can be found at <https://extension.missouri.edu/publications/g1921>.



Herbicide and adjuvants in warehouse. Image Credit: Penn State Weed Science, D. Lingenfelter

*Mr. Lingenfelter is with the Dept. of Plant Science at Penn State Univ. From Penn State Extension, <https://extension.psu.edu/herbicide-storage-over-the-winter>, October 19, 2021.*

### A12. HERBICIDE STORAGE TEMPERATURES:

Herbicides may be exposed to freezing temperatures in storage. The following information gives the minimum storage temperature to avoid risk of reduced herbicide activity.

#### No storage temperature restriction

Most dry formulated herbicides in DF or WDG formulations and Harness/Surpass\*, Aim, Authority MTZ, Axial XL, Balance Flexx/ Pro, Select\*, Banvel\*, Discover NG, Dual\*, Eptam, Extreme, glyphosate, Impact, Laudis, Liberty, Outlook\*, Status, and Valor.

#### May store below freezing but warm before using

2,4-D amine, 2,4-D ester\*, atrazine 4L\*, Betamix\*, Dual Magnum\*, MCPA amine and ester\*, Tordon\*, and Weedmaster\*.

#### Do not store below 40°F

Authority First, Curtail\*, Extreme, Flexstar, LI-700, Nortron, Prowl\*, Sonalan, Spartan 4F, Treflan\*.

#### Do not store below 32°F

Assure II\*, Basagran\*, Beyond, Bronate\*, ClearMax, Far-Go, Flexstar, Fusilade DX, Fusion, Goal, Grazzone P+D, Hyvar, Liberty, Lorox DF, paraquat\*, Poast, Pramitol, Prowl H2O, Puma\*, Pursuit, Quest, Raptor, Redeem, Reflex, Reglone\*, Remedy, Resource, Select Max, Stinger\*, Thistrol, Ultra Blazer, Wolverine.

#### Do not store below 20°F

Capreno, Fusilade DX, Huskie/Complete, Milestone, Plateau, RoNeet, Starane NXT\*, Varro, Weedar 64.

#### Do not store below 10°F

Amitrole T, Arsenal, Curtail M\*, Crossbow, Roundup (ipa salt)\*, Rodeo, Starane\*, and WideMatch\*.

#### Do not store below 3°F

Buctril\*, Discover, Huskie.

#### Do not store below -10°F

Callisto, Halex GT, Lumax

## VEGETABLE PRODUCTION

# Success with Green Peas in the Northeast

Julie Kikkert

Nothing says spring like the planting and harvest of green peas, one of my favorite eat-in-the-field vegetables! Peas are a cool season crop that thrive in the humid climate of the Northeast. Below are tips for a successful crop along with some of the most common problems that I have seen over my 20+ career in extension. Best wishes to all pea growers this season and please reach out to one of our specialists if you have questions or issues in your fields.



Pods of green peas ready for harvest.

## Varieties

While you have probably already obtained your seed for 2021, here are some resources to help in future decisions. Keep track of your own experience this year and compare with what the researchers have observed. The 2020 fresh market pea variety trial report from Crystal Stewart-Courtens, Extension Vegetable Specialist with the CCE in eastern NY is available as a pdf for printing or as a podcast at [https://enych.cce.cornell.edu/submission.php?id=733&crumb=crops|crops|peas|crop\\*22](https://enych.cce.cornell.edu/submission.php?id=733&crumb=crops|crops|peas|crop*22)

Processing pea growers have their seed provided to them by the processor. Cornell University and the University of Delaware run processing pea variety trials regularly. If you are interested to learn more, the reports are available at the following websites:

- Cornell University: <https://www.vegetables.cornell.edu/crops/processing-vegetable-research-and-extension-program/>
- University of Delaware: <https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/variety-trials/>

## Planting

Preparation for planting peas begins the previous year with perennial and winter annual weed control, soil testing, zone building and planting cover crops. Spring tasks include field and seedbed preparation followed by planting. Make sure to select fields that have good soil health and are well-drained because peas generally have weak root systems and easily succumb to seed rots, root rots and subsequent die-off when the crop is fill-

*Continued on page 16*

# Welcome to CBD, the Farmer's Way



At Farmulated, our Pennsylvania-grown, farm-to-table CBD products are carefully cultivated and third-party tested for safe, premium CBD in every single batch. As family crop farmers, we know the importance of offering the freshest ingredients at affordable prices. That's just the way we operate.

[info@farmulated.com](mailto:info@farmulated.com) | 814-796-7082 | [www.Farmulated.com](http://www.Farmulated.com)



**Farmulated**  
PREMIUM CBD

## VEGETABLE PRODUCTION

**Success with Green Peas in the Northeast** *continued from page 15*

ing the pods, especially if drought and heat stress are prevalent. **PLANTING IN WET OR COMPACTED SOILS IS THE NUMBER ONE PREDICTOR OF PEA CROP FAILURE!** Planting can begin in late-March for the earliest varieties and continue until late-May. Pea seed will germinate at soil temperatures as low as 40°F, however the optimum temperature is between 50° to 75° F. Some growers inoculate the seed with symbiotic bacteria that fix nitrogen, however, this is generally not needed except for fields with no history of peas in the rotation and low nitrogen levels. A pre-emergent herbicide may be applied. Seeds should be planted at a maximum of 1 inch depth unless the soil is very dry. Fresh market growers typically plant 18-20 plants per yard in the row and 32-36 inches between rows. Processing growers use 7-inch rows, with 16-22 plants per yard in the row depending on variety. Seeding rate must be adjusted to the seed size, which can vary greatly. Seedlings will begin to emerge in about 10 days depending on the weather.

**Weed Control**

Weed management is an important component of pea production. Weeds in pea fields reduce yields and interfere with machine harvest. Flower buds of Canada thistle, corn chamomile “daisy”, and nightshade berries are all contaminants in processing peas because they cannot be easily separated from the shelled peas. Processing growers also need to keep fields free of wheat and small grains because of concern over gluten contamination.

Peas do not compete well with weeds and it is wise to avoid fields with known serious weed problems. Growers may begin blind cultivation with a tine weeder or flexible harrow, prior to the ground cracking. The goal is to kill very tiny weeds at the white thread stage. Be aware that peas are very susceptible to breakage if they are in the crook stage before ground crack, until the seed leaves are unfolded and horizontal. Organic growers may continue tine weeding or other cultivation depending on planting configuration for fresh or processing market. There is a concern with processing peas of bringing up stones that will be picked up with the harvest machine. Young processing peas will withstand a light rolling to tamp down the soil and stones after tine weeding. For more tips on weed management for organic peas, refer to the Cornell Production Guide for Organic Peas for Processing at <https://ecommons.cornell.edu/handle/1813/42896>.

Conventional growers should note that peas are sensitive to residues of several herbicides. Peas are very sensitive to atrazine. Do not plant in fields where more than one pound of atrazine was applied the previous year. There is an 18-month restriction for planting into fields where mesotrione (Callisto, Instigate, Halex GT, Lexar, Lumax, Realm Q, Zemax) and clopyralid (Hornet WDG, Stinger, SureStart, TripleFlex) have been applied. Make sure to know the history of herbicide use in your field and note planting restrictions for peas.

Herbicides labeled for use in peas include pre-plant incorporated, pre-emergence, and post-emergence products (see the Mid-Atlantic Commercial Vegetable Recommendations Guide weed section). Herbicide choice should be based on the weed species, crop growth stage, weather, and pre-harvest interval. Applicators should read the product labels carefully for full details. Postemergence herbicides need to be applied at the correct stage of pea growth to avoid crop injury.

**Diseases****Seed Decay and Damping-off**

In the Northeast, *Pythium ultimum* and *Rhizoctonia solani* are the principal pathogens causing seed decay and/or seedling damping-off diseases of peas grown throughout the production regions in the state. Seeds of poor quality and vigor as well as

those planted in suboptimal soil conditions germinate rather slowly, and thus are most prone to attack. Infected seeds often become discolored, exhibit soft rot, and eventually decay. Seeds may not germinate or seedlings may die before reaching the soil surface or die shortly afterwards, resulting in poor emergence and stand establishment. The first and most important management option against these diseases is the use of high-quality seeds that are pathogen-free and treated with effective products, where possible. Captan and Thiram fungicide seed treatments are fair against *Pythium*, *Rhizoctonia*, and *Fusarium* sp. Apron fungicide is best for *Pythium*, while Maxim fungicide is best for *Rhizoctonia* sp. Organic (OMRI approved) seed treatments are being studied.

**Root Rot**

Several pathogens alone or in combination can cause root rot symptoms in peas. *Fusarium cortical rot (Fusarium solani f. sp. pisi)* has been the most prevalent disease of peas in Western NY in recent years, followed by *Fusarium wilt and near wilt (F. oxysporum f. sp. pisi)* (G. Abawi, Cornell). These pathogens only infect peas and you will only see these diseases if peas have been grown in a field before. These fungi can survive for a very long time in soil. Root and stem rots can also be caused by *Rhizoctonia* and *Pythium* spp., which can affect a number of other vegetable crops as well. If that isn't enough, pea roots can also be infected with *Thielaviopsis* and *Aphanomyces* spp.



Yellow patches, coupled with poor growth are symptoms of weak root development and/or root rot.



Pea plants with severe root rot.

## VEGETABLE PRODUCTION

### Success with Green Peas in the Northeast *continued from page 16*

Damage caused by root disease pathogens is greatest in poor quality soils. Thus, improving soil health status will directly or indirectly improve root health and reduce damage of root pathogens. It has been shown that assessing root health is a highly correlated biological indicator of soil health in general. Roots growing in healthy soils generally are of larger size, firm, have large numbers of fibrous rootlets, penetrate deeper into the soil profile, and exhibit limited or no symptoms of infections by root pathogens. Such roots are more tolerant to environmental stress conditions and more efficient in absorbing water and nutrients. In addition, it is known that all soil health management practices (various modifications of tillage systems, cropping sequences, cover crops and soil amendments) directly or indirectly affect the populations of root pathogens and their damage to vegetable crops.

#### Best Practices to Keep Pea Roots Healthy

- Use high quality, pathogen-free, and fungicide treated seed.
- Well-drained soils, free of compaction
- Plant peas only once every four years in a field
- Avoid fields with a history of severe root rot
- Rotations with grain crops will improve soil structure and reduce disease severity.
- Use tolerant varieties

#### Foliar Diseases

Although peas are susceptible to many foliar diseases they are uncommon and to date have not caused obvious losses in NY.

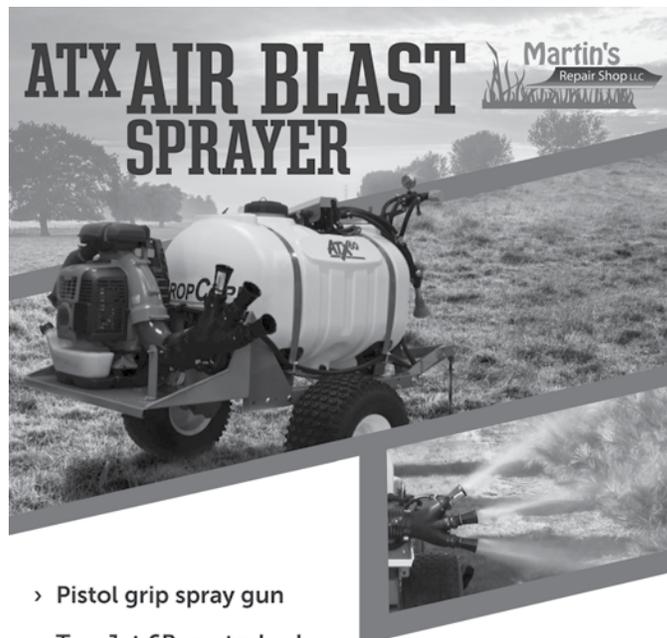
#### Insects

Insect pests are generally not a major problem in peas in NY, but seedcorn maggot and aphids are occasional pests. Aphids can feed on pea leaves and pods, but are usually not a concern unless populations get very high. Seedcorn maggots are most severe when cool, moist spring conditions slow seed germination and growth of young plants. Seedcorn maggot adults emerge from overwintering pupae. Mated females fly close to the ground in search of suitable egg laying spots— preferably near decaying organic material or germinating seed to provide a food source for the newly hatched larvae. Eggs hatch 2-3 days after being laid, and the maggots feed on and burrow into the seed and stems. Maggots develop through larval stages for 2-3 weeks depending on the temperature. If damaged plants aren't killed outright, the injury provides wounds for plant pathogens to attack, causing root and stem rots to develop. Prevention is the key to control because there are no effective rescue treatments. Among the most important steps are to incorporate crop residues and cover crops 2 to 3 weeks prior to planting and avoid manure applications right before planting as this attracts egg-laying adults. In small, fresh market plantings, row covers may prevent egg laying and subsequent plant damage, however, they will not protect crops where pupae are already in the soil.

*Written by Julie Kikkert, Cornell Cooperative Extension, Cornell Vegetable Program. Originally published in the Veg Edge Newsletter Volume 17:4 on April 21, 2021. All photos by Julie Kikkert.*

*This article was originally written for a New York grower audience where peas are commonly grown on a larger acreage for processing. It has been modified slightly to be more relevant to our New England grower audience.*

*From **Vegetable Notes for Vegetable Farmers in Massachusetts**, Univ. of Massachusetts Extension, Vol. 33, No. 5, May 6, 2021.*



- > Pistol grip spray gun
- > Tee-Jet 6B control valve
- > Pressure regulator
- > Jet agitation
- > Calibration disc

Produced by:  
**Martin's Repair Shop LLC**  
 27 W Mohler Church Rd. Ste 1  
 Ephrata, PA 17522  
 717-733-3015

See a video of the ATX and MRS units in operation at [https://www.youtube.com/watch?v=2CGn\\_Bhcx8](https://www.youtube.com/watch?v=2CGn_Bhcx8)

### SEE VIDEOS OF SPRAYERS IN ACTION ON UPDATED WEBSITE! NEW HYDRAULIC FOLD SPRAYER FEATURES AIRBAG BOOM SUSPENSION!



**200, 300 & 400 Gal. Manual Fold • 300 & 400 Gal. Hyd. Fold**

*Ask us about the advantages of the front mount boom.*

## **PENNS CREEK MFG.**

1340 Broadway Rd., Winfield, PA 17889

570-837-1197

[www.pennscreekwelding.com](http://www.pennscreekwelding.com)

**BUILDERS OF DEPENDABLE ECONOMICAL VEGETABLE SPRAYERS**

VEGETABLE PRODUCTION

# Sprouting Broccoli, Gai Lan and Sprouting Cauliflower

Gordon Johnson

There has been an increase in consumer interest in sprouting broccoli (also known as baby broccoli), Gai Lan (Chinese broccoli), Gai Lan x broccoli crosses (broccolini), and sprouting cauliflower (caulilini, Asian sprouting cauliflower). In all these crops the stalk and flowering head are eaten. Sprouting broccoli looks like a small broccoli with thinner stalks, Gai Lan has a thick stem and a small sprouting head, broccolini has a long tender stem and smaller buds, and sprouting cauliflower has green stems and a loose cream-colored head.

Crop culture is similar to broccoli but with closer spacings. There are spring adapted, spring-summer adapted, fall adapted, and overwintering types. Nutrient requirements are similar to high density broccoli and the insect profile is also similar to broccoli. We are unsure of disease profiles in our area at this time.

Crops are cut and bunched just before or after the first flowers are seen but before the heads open. They should be cooled immediately to below 40 F and kept under high humidity. They may also be top-iced.

We have a trial at our Georgetown research farm to look at the potential for processing (freezing) these sprouting types.

*Dr. Johnson is the Extension Vegetable and Fruit Specialist at the Univ. of Delaware. From the **Weekly Crop Update**, Univ. of Delaware Extension, Vol. 29, Issue 27, September 24, 2021.*



G Johnson, University of Delaware

Mini broccoli



G Johnson, University of Delaware

Sweet Stems sprouting broccoli



G Johnson, University of Delaware

Gai Lan in the field



G Johnson, University of Delaware

Chinese broccoli ready for freezing trial



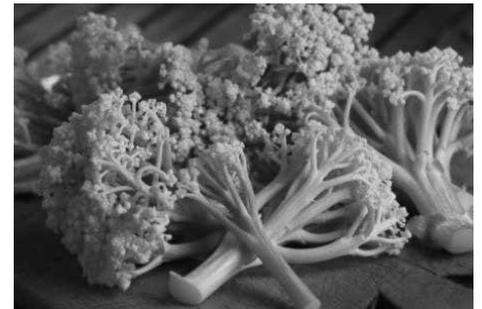
G Johnson, University of Delaware

A big-stemmed variety of Gai Lan



G Johnson, University of Delaware

A thin-stemmed variety of Chinese broccoli



Caulilini Photo from <https://www.naturesproduce.com/meet-caulilini-a-new-vegetable-which-isnt-actually-that-new/>

VEGETABLE PRODUCTION

# Unusual Foliar Blight Found in Southern Maryland Organic Tomatoes

Jerry Brust; Ben Beale; and Karen Rane

A very unusual and seldom seen tomato foliar blight was found by an intrepid county educator in Southern Maryland last week. This disease is called Rhizoctonia Foliar blight caused by Rhizoctonia solani. The symptoms of Rhizoctonia foliar blight



Figure 1. Rhizoctonia leaf blight on tomato

are brown necrotic lesions on blighted tomato leaves that are found in the top of the canopy (Fig. 1). These blighted leaves usually have a white mass of mycelia on the edge of dark (necrotic) lesions (Fig. 2) and can look very much like late blight. It is believed that the primary inoculum is aerially dispersed basidiospores. Other than that, little is known about this uncommon disease.

Symptoms appear during hot, wet weather in tomato plantings that have **NOT had any fungicides applied** to them. Fungicides, such as mancozeb, chlorothalonil and possibly others commonly used to protect tomato foliage from fungal diseases, are also

reportedly effective against Rhizoctonia foliar blight. This is likely the reason that this disease is rarely seen, but it might become more common in the future in organic tomato systems. Growers, both conventional and organic, should keep watch for these foliar symptoms and seek a diagnosis, to make sure late blight is not overlooked.

*Dr. Brust is the IPM Vegetable Specialist at the Univ. of Maryland, Mr. Beal is an Univ. of Maryland Extension Agent, and Dr. Rane is the Plant Diagnostician at the Univ. of Maryland. From the **Weekly Crop Update**, Univ. of Delaware Ext., Vol. 29, Issue 22, August 20, 2021.*

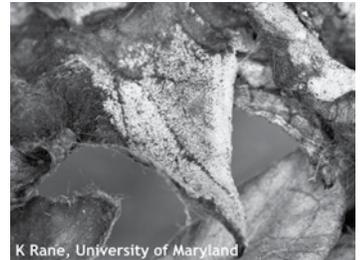


Figure 2(1). Rhizoctonia foliar blight of tomato with white mycelia on edge of necrotic area

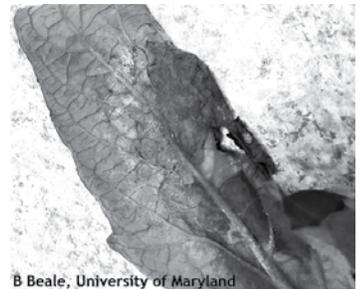


Figure 2(2). Rhizoctonia foliar blight of tomato with white mycelia on edge of necrotic area

**TEW MANUFACTURING CORP.**

**Fruit & Vegetable Cleaning & Sizing Equipment & Parts**

**Quality Latex & Poly Sponge Rubber Drying Donuts**

**Tuff Foam® Protective Padding**

**Brushes • Bearings • Sizing Chains**

**Belting • Scrubber Rubber**

**New Stainless Steel Machines**

**CALL TOLL FREE 800-380-5839 FOR CATALOG & PRICES**

TEW MFG. CORP. 585-586-6120  
 P.O. BOX 87 FAX: 585-586-6083  
 PENFIELD, NY 14526 www.tewmfg.com

***lambert***

**PREMIUM PROFESSIONAL PEAT-BASED SUBSTRATES**

**FOR ALL YOUR GERMINATION AND ALL PURPOSE NEEDS**

**JEFFREY P. BISHOP**  
 Cell: (315) 480-1900  
 Toll Free: (888) 632-8808  
 lambertpeatmoss@aol.com  
 www.lambertpeatmoss.com

products available  
**OMRI**  
 LISTED  
 Para Producción Orgánica For Organic Use

## VEGETABLE PRODUCTION

# Cladosporium Leaf Spot of Spinach

Genevieve Higgins



*Cladosporium leaf spot on spinach. Photo: G. Higgins*

Over the last few months, [Note: This article was originally written in December 2020.] Extension staff from across New England have been receiving reports of *Cladosporium* leaf spot on field and high tunnel spinach crops. While this disease is relatively uncommon and unstudied in the Northeast, it has been appearing more frequently over the last few years.

## Identification

*Cladosporium* leaf spot is caused by the fungal pathogen *Cladosporium variabile*. Early leaf spots are tan colored, and expand to 1-3mm in diameter. Adjacent spots may coalesce, forming irregular lesions. As the disease develops, velvety dark green-brown sporulation develops within the lesions. In severe cases, older infected leaves may be killed.

## Life Cycle

Development of *Cladosporium* leaf spot is favored by cool, humid environmental conditions that often occur in the fall and in winter high tunnels in New England. Optimum conditions for infection are 59-68°F and relative humidity above 80%, but infection can occur at temperatures between 50 and 86°C and the fungus can continue growing at temperatures as low as 41°F.

In the absence of a spinach crop, *Cladosporium* may overwinter on crop residue, spinach volunteers, and weed hosts (which weeds serve as hosts for this disease has not been confirmed). Viable spores of *Cladosporium* have been isolated from dried spinach leaves and seed up to 8 years old. In the field, spores are spread by splashing water, wind, workers, and equipment.

*Cladosporium* can be seed-borne; in one 2006 study from Washington State University, *Cladosporium* was found infesting 37 out of 66 seed lots tested, with infestation levels ranging from 0-49%. Under the right environmental conditions, it's likely that seed contamination could lead to infected seedlings, although this hasn't yet been confirmed in the field, only in a controlled greenhouse environment.

## Cultural Controls & Prevention

- **Till under crop residues** promptly after harvest to speed up decomposition.
- **Hot water seed treatment** can effectively eliminate *Cladosporium* from spinach seed. Researchers at Washington State University found that treating infested seed at 40°C/104°F for 10 minutes sufficiently eliminated *Cladosporium* and that germination only decreased when seed was treated at 50°C/122°F for 30 minutes or more, or at 55°C/131°F for 10 minutes or more.

- **Chlorine seed treatment** also effectively eliminates *Cladosporium* from spinach seed and does not reduce germination. Soak seed for 10 minutes in a 1.2% sodium hypochlorite (NaOCl) solution. NaOCl is the active ingredient in bleach; different bleach products have different percentages of NaOCl, with 5.25% being a common concentration. To make a 1.2% NaOCl solution from a common 5.25% NaOCl product, dilute bleach with water at a 1:3 ratio. There are many bleach solution calculators available online (here's an example). Note for dilution calculators: 1000ppm = 1%.
- **Use drip irrigation or overhead irrigate early in the day** on sunny days, when possible, so that crop foliage will dry quickly.
- **Control weeds** within your crop, as well as around the outside edge of high tunnels, both to increase air flow and eliminate possible weed hosts.
- **Variation in susceptibility** to *Cladosporium* between spinach varieties has been noted in the field, but resistance is not regularly evaluated for commercially available varieties.

## Chemical Controls

Few products are labeled specifically for *Cladosporium* leaf spot in spinach and little research has been conducted on chemical control of this disease. QoI fungicides, commonly known as strobilurins, (FRAC Group 11) have been shown to effectively control this disease. Group 11 products that are labeled for spinach include Quadris (note: Quadris Top and Opti are not labelled for use on spinach), Reason, and Cabrio, and combination products including Merivon (groups 7 & 11) and Tanos (groups 27 & 11). In one University of Florida trial that evaluated Cabrio, Merivon, and Tanos, among other products, Cabrio and Merivon provided better control than Tanos.

- Because QoI fungicides have a single-site mode of action, pathogens frequently develop resistance to this group of fungicides. A few rules of thumb for using materials in FRAC group 11 are:
- Limit the total number of QoI applications. Product labels often provide information on maximum number of applications allowed per season. If no guidelines are given, make no more than 3 applications.
- Use a maximum of 1 QoI spray out of every 3 fungicide applications when using QoI alone (as opposed to a tank mix or combination product).
- Use a maximum of 1 QoI spray out of every 2 fungicide applications when using a tank mix or combination product.
- Do not make consecutive applications of QoI fungicides.
- Tank mix with a contact fungicide or use a combination product containing a contact fungicide (e.g. chlorothalonil, mancozeb, sulfur, oil).

Copper products are effective protectants for this disease.

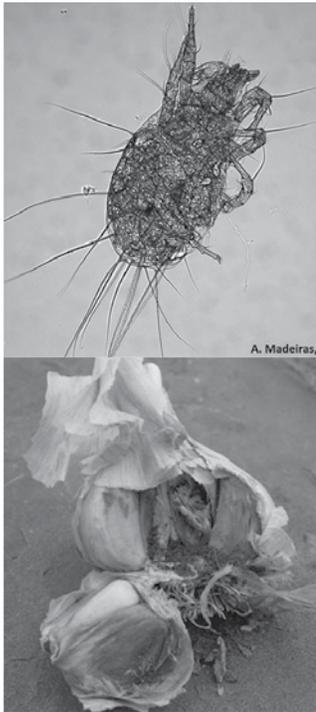
No research has been conducted on control of *Cladosporium* with OMRI-listed products. Copper is the most effective OMRI-listed material for controlling foliar fungal diseases, in general. Adding a *Bacillus subtilis* (e.g. Serenade) or *Bacillus amyloliquifaciens* (e.g. Double Nickel, Stargus, Taegro, Triathlon) product to copper has a synergistic effect, meaning that applying copper + *Bacillus* provides better control than either product alone. Hydrogen dioxide products (e.g. OxiDate) will kill spores on contact but does not kill the fungus within the plant or offer any protection against future infections.

*Ms. Higgins is with the Univ. of Massachusetts Vegetable Program. From Vegetable Notes for Vegetable Farmers in Massachusetts, Univ. of Mass. Ext., Vol 32, No. 28, December 17, 2020.*

VEGETABLE PRODUCTION

# Culling Garlic: Don't Store or Plant Infected Bulbs

Susan B. Scheufele



There are several opportunities to inspect garlic for symptoms of nematode and disease infection and cull compromised bulbs: during harvest, when crops are going into storage, or as you cut and sort for seed vs. food. At any of these times, we recommend carefully checking and culling garlic in order to prevent disease from spreading through storage and to prevent contaminating another field or next year's crop by planting infected bulbs this fall. Most disease symptoms we see in garlic bulbs result from infections that occurred in the field, and most of the pathogens persist for many years in the soil, so identifying any diseases in your crop now will tell you which fields to avoid planting garlic into in future years. Inspecting your garlic is also very important if you will be selling any garlic as seed; diseases and pests can quickly spread from

one source of infected seed. If you suspect any of the problems below, the Penn State Plant Disease Clinic can make a positive identification; for submission instructions and contact info visit <https://plantpath.psu.edu/about/facilities/plant-disease-clinic> or call 814-865-2204. Below are descriptions of the most common pests and diseases that will affect garlic seed and storage crops.

**Bulb mites** (*Aceria tulipae* and *Rhizoglyphus* spp.) are an increasing problem in garlic production across the Northeast. They feed on the garlic roots and basal plate in the field, causing stunting, deformed, yellow leaves, and lack of vigor. In storage, the mites move into the garlic bulb, where their feeding activity causes sunken tan to brown spots to form on cloves. Feeding activity also provides entry points for secondary pathogen like soft-rot bacteria and fungi. Desiccation may occur. Garlic seed infested with bulb mites may fail to germinate. In the field, plants may outgrow the damage if the infestation is not heavy, but mites may increase in number over the growing season and over years of planting infested seed. In the field, mites feed mainly on the roots and basal plate. Bulb mites can overwinter in the soil, especially in soils with high levels of decaying organic matter, and can survive on the residues of a number of crops. Plant only in fields where crop residue is thoroughly decomposed. **Avoid planting alliums directly after brassicas, corn, grain, or grass cover crops.**

**Stem and bulb/Garlic bloat nematode** (*Ditylenchus dipsaci*) infests garlic stems and bulbs, causing bulb decay at both the neck and the basal plate of the bulbs. This damage can look similar to *Fusarium* basal plate rot. In the field, plants may be stunted and leaves may be distorted and yellow and may die back

Top: *Rhizoglyphus* mite at 10x magnification. Photo: A. Madeiras  
Bottom: Sunken brown spots on garlic cloves and basal plate damage from bulb mite feeding. Photo: E. Sideman

Continued on page 22

Your Source for . . .

# HIGH TUNNELS

**RIMOL**  
Greenhouse  
Systems, Inc.

Call Harry Edwards @ 717.606.8021  
or Email [hedwards@rimol.com](mailto:hedwards@rimol.com)

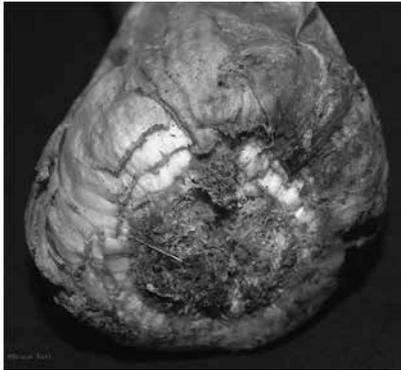
## Refrigerated and Ventilated Cooling Systems for Fruit and Vegetable Storages

- COMMERCIAL REFRIGERATION
- DESIGN, SALES AND SERVICE
- SERVING AGRICULTURE FOR OVER 70 YEARS

Free Consultation and Quote  
Call Mike Mager at 585-343-2678

**ARCTIC**  
REFRIGERATION CO. OF BATAVIA  
26 Cedar Street, Batavia, NY 14020  
[www.arcticrefrigeration.com](http://www.arcticrefrigeration.com)

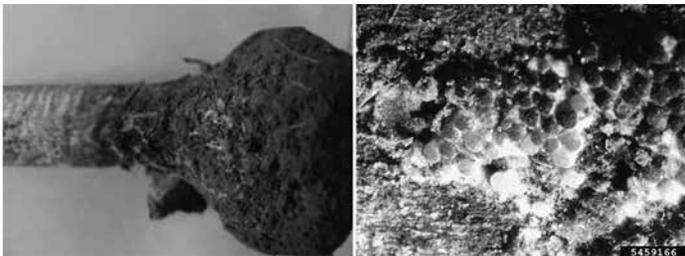
## VEGETABLE PRODUCTION

**Culling Garlic: Don't Store or Plant Infected Bulbs** *continued from page 21*

Symptoms of stem and bulb/garlic bloat nematode. Photo: B. Watts, UMaine.

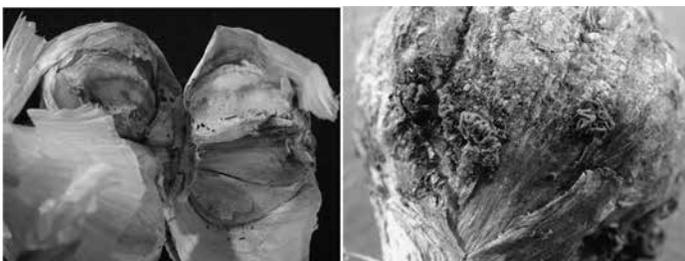
still be sold as food, but be clear with customers that the bulbs should not be used as seed. Once this pest is present in a field, it cannot be eradicated.

**Downy mildew** (*Peronospora destructor*): Affected bulbs may be small and shriveled, with a blackened neck. Some bulbs may sprout prematurely.



Garlic bulb infected with white rot (left) and white rot sclerotia embedded in fungal mycelium (right). Photos: UMaine

**White rot** (*Sclerotium cepivorum*): Similar to the symptoms of bulb mites and garlic bloat nematode, white rot will cause stunting and leaf yellowing and dieback in the field. When infected plants are pulled, white fluffy growth around the stem plate and bulb and small, black, poppy seed-sized sclerotia are visible, often around the neck. Sclerotia are small, dense masses of fungal tissue surrounded by a dark rind that allow the pathogen to persist for years in the soil. White rot sclerotia can survive for 15 years or more in the soil, making this disease one of the hardest diseases of garlic to manage; if you suspect white rot in your garlic, it's especially important to get it diagnosed so that you don't introduce it into a new field this fall. This disease will continue to grow and spread in storage if humidity is not kept low.



*Fusarium basal rot* (left) and *Botrytis bulb rot* with sclerotia present (right). Photos: Oregon State Univ.

**Fusarium basal rot** (*Fusarium oxysporum* f. sp. *cepae*) causes red to purple discoloration of the exterior of the bulb. Sometimes, white fluffy mycelial growth at the base is present. If the

bulb is cut open, one or several cloves may appear brown and watery. Later, the stem plate becomes pitted and a dry rot develops. The disease continues to develop in storage.

bulb is cut open, one or several cloves may appear brown and watery. Later, the stem plate becomes pitted and a dry rot develops. The disease continues to develop in storage.

**Botrytis neck and bulb rot** (*Botrytis porri* and *B. allii*, respectively) infections start in the fields but symptoms usually do not develop until the bulbs have been moved into storage—a good reason to check your curing garlic periodically! Affected neck or bulb tissue is initially water-soaked, but later turns dry and necrotic. Sclerotia—those hardy black resting structures—form in the neck or adhere to the rotten outer scales of the bulb. Sclerotia of *Botrytis* are shriveled and look a little like a small raisin; they are much larger than white rot sclerotia, but survive in the soil for fewer years.



*Penicillium decay*. Photo: Oregon State Univ.

**Penicillium decay** (*Penicillium* spp.) is a major cause of bulb decay in storage and can spread to healthy bulbs via airborne spores. The fungus causes fuzzy, blue-green growth on diseased cloves, usually starting at the base.

Keep these symptoms in mind as you pop and plant your garlic this fall to avoid planting affected cloves. Below are some tips for next year to help prevent conditions that allow diseases to spread within your garlic crop.

**Disease Prevention Tips for Harvest and Storage:**

- **Do not irrigate within 7 days before lifting or harvesting.** Avoid harvest after heavy rains.
- **Avoid mechanical injury and bruising of bulbs during production and harvest.** Avoid banging cloves together to remove mud and dirt from roots.
- **Properly cure bulbs.** Cure in a well-ventilated area at 70-80°F. Practices that hasten curing include undercutting bulbs to sever all roots, avoiding nitrogen fertilization later than two months after seeding, and proper plant spacing. Under wet conditions when bulbs cannot be cured adequately, artificial drying with forced hot air followed by normal storage should be considered.
- **For long-term storage, garlic is best maintained at temperatures of 30 to 32°F with low RH (60 to 70%).** Good airflow throughout the vented bins or other storage containers is necessary to prevent any moisture accumulation. Under these conditions, garlic can be stored for more than 9 months. –

*Ms. Scheufele is with the Univ. of Massachusetts Extension Vegetable Program. From the Vegetable Notes for Vegetable Farmers in Massachusetts, Univ. of Mass., Vol. 33, No. 24, October 7, 2021.*

**ANNUAL CONVENTION**

**2022 Mid-Atlantic Fruit and Vegetable Convention Set for February 1 to 3 at the Hershey Lodge** *continued from page 1*

The fourteenth annual Mid-Atlantic Cider Contest will be conducted during the Convention to determine the best tasting cider produced in the region. On February 1, fruit and vegetable growers will gather for the annual Fruit and Vegetable Growers Banquet which will include awards and recognitions. On February 2, there will be an Ice Cream Social for all in the evening plus a reception for apple growers. This year's Ice Cream Social will feature research posters and the opportunity to visit with the researchers presenting the posters.

Registration is required for all persons attending the Convention trade show or educational sessions. Registration with any of the five sponsoring organizations allows one to attend any of the sessions although there are additional charges for workshops and meals. For further information, go to [www.mafvc.org](http://www.mafvc.org) or call 717-677-4184 or 717-694-3596.

<b>2022 Mid-Atlantic Fruit and Vegetable Convention Educational Program Outline</b>	
<b>Monday, January 31</b>	
Basic Greenhouse Floriculture School	FSMA Grower Certification Training
New Technology in Agriculture	PA Pesticide Certification Training
Hemp Production	Conducting and Analyzing On-Farm Research
Farm Transition	Farm Market Bus Tour
<b>Tuesday Morning, February 1</b>	
<b>Tuesday Afternoon, February 1</b>	
Tree Fruit	Tree Fruit
Vine Crops	Pumpkins/Winter Squash
Peppers/Eggplant	General Vegetables I
Asparagus	Soil Health/Cover Crops
Snap Beans	General Vegetables II
Allium	Controlled Environment Ag
Food Banking	Wholesale Marketing
What is the Return on Your Marketing Dollars	Comparing POS and Reservation Systems
Keynote	
<b>Wednesday Morning, February 2</b>	
<b>Wednesday Afternoon, February 2</b>	
Tree Fruit	Tree Fruit
Tomatoes	Sweet Corn
General Vegetables	Stone Fruit
Greenhouse Ornamentals	Greenhouse Ornamentals
Organic Vegetable Production	Organic Vegetable Production
Marketing 101	Agritourism
Small Fruit	Small Fruit
Labor/Farm Management	Labor/Farm Management
Spanish	Spanish
<b>Thursday Morning, February 3</b>	
<b>Thursday Afternoon, February 3</b>	
Tree Fruit	Tree Fruit
High Tunnels	Year-Round High Tunnel Production
Winter Storage Vegetables	General Vegetable/No-Till Vegetables
Cut Flowers	Innovative Crops for Small Farms
Potatoes	Potatoes
Direct Marketing Post-Covid	Digital/Social Media
Small Fruit	Small Fruit
Stone Fruit	Labor/Farm Management

**Pennsylvania Vegetable Growers Association**

815 Middle Road  
Richfield, Pennsylvania 17086-9205  
717-694-3596  
pvga@pvga.org  
www.pvga.org

*Address Service Requested*



PRESORTED STANDARD  
U.S. POSTAGE  
**PAID**  
HARRISBURG PA  
PERMIT NO. 533

Since 2001 Authority in Refrigeration for  
Agro-Industrial Applications in North America.

**PLUG AND PLAY**  **FREE COOLING**

- Thru the Wall
- Portable
- Roof Mounted
- Hydrocoolers
- Custom Designs
- Blast Freezers
- Chillers
- Greenhouse Coolers



**ENERGY Efficient**

1.866.748.7786  
info@kooljet.com

# HEALTHY PREDATORS, PARASITES ON PATROL

**Use Biocontrol To Stamp Out:**

- Aphids
- Whiteflies
- Fungus Gnats
- Spider Mites
- Thrips

References available in your area.

**“I was REALLY pleased! I didn’t see aphids [on the tomatoes] during the whole growing season.”**

Vernon Weaver  
McAlisterville, PA

**Hearty Beneficials GUARANTEED**  
Call 315.497.2063



**IPM Laboratories, Inc.**  
ipminfo@ipmlabs.com  
Since 1981

**www.ipmlabs.com**