Back in early March, things were on schedule for West Virginia’s FFA chapters and 4-H clubs. FFA members were in the midst of their annual Ham, Bacon and Egg Shows and Sales and 4-H clubs were meeting on a regular basis. Then along came COVID-19. By mid-March, under the governor’s orders, schools went to on-line learning and extracurricular activities were cancelled indefinitely.

Within a few weeks, things like the annual FFA convention and the summer 4-H camping season were cancelled.

Jocelyn Crawford, the 4-H agent for WVU Extension Service in Kanawha County, said it was done out of an abundance of caution.

“WVU was very quick to make sure that all the safety precautions that were necessary were taken. In May, the decision was made for us to not do any camping programming this summer. Of course, to me, my favorite thing about 4-H is camping, and I know that’s how it is for a lot kids all over the state. But you know, it’s one of the necessary things that you have to do to make sure that you’re keeping the greater community and greater society at large safe,” stressed Crawford.

Nathan Taylor, state FFA advisor, said he knew pretty early on that the annual FFA summer convention, set for July 8-11, would not take place either.

“There was the initial shock and disbelief whenever things started breaking and things started getting cancelled. In April is when we made the decision, we weren’t going to hold an in-person convention,” Taylor said.

But despite the cancellations for both groups, they knew they had to move on and offer some sort of programming, albeit virtually.

“Our FFA state officer team from last year sat down and reviewed what we do within our convention sessions and condensed them from six sessions down to three. The officers then recorded those sessions on cell phones, tablets and video cameras. We took those recordings and uploaded them to the cloud space. It was pretty interesting to see how it all came together.”

— Nathan Taylor
State FFA Advisor

“We’re doing a mixture of online camping experiences through Zoom with things like classes and assemblies and we’re also sending things home, especially to kids who don’t have high-quality internet access. One of my colleagues who lives in Pocahontas County said about 30 percent of her kids don’t have Internet access. So, she’s been adapting their camping program to sending home a box full of activities and stuff for the kids to do so they can still experience that week of camp.”

— Jocelyn Crawford
4-H agent for WVU Extension Service in Kanawha County

The biggest challenge for 4-H, according to Crawford, was how to handle summer camping.

“We’re doing a mixture of online camping experiences through Zoom with things like classes and assemblies, and we’re also sending things home, especially to kids who don’t have high-quality internet access,” said Crawford. “One of my colleagues who lives in Pocahontas County said about 30 percent of her kids don’t have internet access. So, she’s been adapting their camping program to sending home a box full of activities and stuff for the kids to do so they can still experience that week of camp.”

Another annual rite of passage, livestock shows, were also impacted by COVID-19 when fairs and festivals were cancelled.

“Some kids [both FFA and 4-H] were able to show their animals at jackpot shows before the governor’s order cancelling fairs and festivals. Some counties held reduced capacity shows where it may only have been the exhibitors and their parents who were present because of social distancing concerns. Others held virtual shows,” explained Taylor. “If our programming was, instead of having everybody come to one place, they’re going to the exhibitors the week before the fair would have taken place and getting photographs of the animals from different profiles. That way the judges will have six to eight high quality photos to judge from. In Marshall County, they created a Facebook group for the Youth Livestock Show. They were doing Facebook live feeds with each exhibitor for all their livestock shows. We’ve got a lot of people utilizing technology as best as they can!”

As for what the future holds for both FFA and 4-H, it’s still a work in progress.

“We have our FFA career development events every September and December at WVU. Our September event had to be cancelled. Our fall leadership conference was slated to be held the first week of October, obviously that’s not going to be an in-person event,” said Taylor. “So, we’re looking at trying to identify four or five virtual delivery methods to hold those events.”

As for 4-H, Crawford says there’s no set timeline to get “back to normal.”

“That’s the biggest question I get, and it’s the hardest to answer because we’re not sure when things will be back to the way they were. However, people can expect that 4-H will continue to do programming for youth and communities as they have before. It may not look the same, but we’re still going to be out there providing programming.”
Weather Data Important to West Virginia Agriculture

Long hours, hard work and plenty of regulations farmers, and those who produce our agriculture commodities have some of the toughest and more important jobs in the world. The source of a lot of that unpredictability falls to Mother Nature. From droughts to floods, extreme weather conditions can destroy a whole season’s worth of crops and spell the end of a farm operation. With recent dry weather patterns in some parts of West Virginia, it is clear we need more enhanced monitoring systems to identify these types of weather. Through innovative technology, partnerships and a little buy-in from the farmer, the Mountain State will be better able to predict these weather patterns. With that knowledge in hand, we can more accurately help farmers determine ideal conditions to grow their businesses leading to resiliency within our food system.

Any data we can collect is important to West Virginia, but what makes our state unique is the abundance of terrain that causes microclimates that can produce weather extremes. Even locally, hills and valleys can bring different impacts from the same weather pattern. I am sure everyone has experienced isolated rain showers that seem to dissipate once the storm has passed.

In order to understand localized weather patterns, several groups are working to enhance weather data across West Virginia. Organizations such as Rainfall Observers take daily observations of high and low temperatures and the amounts of rain and snowfall. This group records data every day at approximately 7 a.m., seven days a week, 365 days a year. The goal is to have one co-op observer in each county. Despite their best efforts, there is a need for observers in Barbour, Cabell, Clay, Hardy, Jefferson, Lincoln, McDowell, Mingo and Randolph Counties. These dedicated weather watchers need help from folks that are willing to help collect and share weather data.

Simply, data matters. Many of us can recall the June 2016 flood that brought horrific damage to our state. Much of that storm was localized as massive amounts of rainfall were deposited in some of our narrow valleys and streams leading to a catastrophic overload within our waterways. If we had enhanced weather data, we could have better predicted and understood storms like the 2016 flood. With increased notice, we could have provided warnings about the volume of water flowing to downstream areas. More data would have prevented the storm, but would have aided our response to communities that were devastated in its wake. If we are to soften the blow of future disasters, we need more folks to participate in monitoring programs, as well as additional resources from our governments to invest in the technology necessary.

For more information: https://www.cocorahs.org/ or https://www.noaa.gov/

Kent Leonhardt, Commissioner of Agriculture

Understanding FSMA Produce Safety Rules – The Agricultural Water Rule

As with the last set of food safety articles, we will continue to simplify some of the ‘seemingly complex’ food safety requirements under the FDA’s Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR), to help raise awareness of and encourage action in managing food safety risks. These articles are meant to help you to be more proactive rather than reactive by focusing on high-risk food safety areas and identifying hazards within your individual operations. Again, we remind you that these articles do not replace attending a food safety training course to learn about the ‘whole-farm’ approach to managing food safety risks. These trainings are available in WV through the WV Food Safety Training Team.

This article is the second of a three-part series focusing on agricultural water and food safety risks – Subpart E of the FSMA PSR. In the first part of this series we did last month, we discussed whether you have to comply with the requirements of the Agricultural Water Rule under the PSR. We indicated that at present, the FDA is reviewing the Agricultural Water Rule, and new guidance will be released in the near future. Until then, no farmers are subject to the agricultural water provisions of the PSR. That being said, we also discussed that it is a good idea to ‘get a feel’ for the quality of your production water (water used in growing, harvesting, packing and holding covered produce) to allow you to invest in water quality management to meet buyer requirements or as part of a third party audit.

The only objective way to assess your water quality is through microbiological testing for fecal contamination. Controlling fecal contamination is one key to minimizing produce safety issues, and the test for generic E. coli indicates fecal contamination without the cost of testing for all microbial human pathogens. The requirement for agricultural water used during growing activities is a microbial water quality profile (MWQP), based on a rolling set of water testing results. Since the quality of your ground or surface water may change during the growing season, it is best to test an initial sample, and then test follow-up samples (recommendation is four times during the growing season). These combined results will help give you a ‘water quality profile’ so you know what quality of water are you are dealing with and if you need to take correction steps to improve the quality of your water.

Water used during growing activities can have a limited amount of E. coli present in the water, whereas water used during or after harvest must have no detectable generic E. coli present in a 100 mL water sample. We will talk more about water for post-harvest use in the next article. Water that contacts the harvestable part of the crop during the production stages must meet the following criteria:

- A geometric mean (GM) of 126 cells of E. coli per 100-milliliter sample of water. The GM represents a type of average value for the amount of generic E. coli in a water sample; and
- A statistical threshold value (STV) of 410 cells of E. coli per 100-milliliter sample of water. The STV reflects the level of variability in E. coli levels among the samples such as could happen when sporadic rain showers wash waste into rivers and creeks

Your water testing lab or local extension agent can help you calculate the GM and STV ‘combined values’. If your baseline water tests results are higher than the criteria above, then the cause of the deviation must be determined and corrective actions taken. You may treat the water, fix the issue if it is well or water-line related, or apply a timed interval (up to four days) between irrigation and harvesting. In addition to testing, you must conduct an annual inspection of your entire water system to determine any conditions that might lead to a contaminated water supply.

Funding for this article was made possible, in part, by a grant from the Food and Drug Administration, United States Department of Agriculture. The views expressed in written materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does any mention of trade names, commercial practices, or organization imply endorsement by the United States Government.

The Market Bulletin: Kent A. Leonhardt, Commissioner | Joseph L. Hatton, Deputy Commissioner

Understanding FSMA Produce Safety Rules – The Agricultural Water Rule

(Part 2 – Testing Criteria for Production Water)

As with the last set of food safety articles, we will continue to simplify some of the ‘seemingly complex’ food safety requirements under the FDA’s Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR), to help raise awareness of and encourage action in managing food safety risks. These articles are meant to help you to be more proactive rather than reactive by focusing on high-risk food safety areas and identifying hazards within your individual operations. Again, we remind you that these articles do not replace attending a food safety training course to learn about the ‘whole-farm’ approach to managing food safety risks. These trainings are available in WV through the WV Food Safety Training Team.

This article is the second of a three-part series focusing on agricultural water and food safety risks – Subpart E of the FSMA PSR. In the first part of this series we did last month, we discussed whether you have to comply with the requirements of the Agricultural Water Rule under the PSR. We indicated that at present, the FDA is reviewing the Agricultural Water Rule, and new guidance will be released in the near future. Until then, no farmers are subject to the agricultural water provisions of the PSR. That being said, we also discussed that it is a good idea to ‘get a feel’ for the quality of your production water (water used in growing, harvesting, packing and holding covered produce) to allow you to invest in water quality management to meet buyer requirements or as part of a third party audit.

The only objective way to assess your water quality is through microbiological testing for fecal contamination. Controlling fecal contamination is one key to minimizing produce safety issues, and the test for generic E. coli indicates fecal contamination without the cost of testing for all microbial human pathogens. The requirement for agricultural water used during growing activities is a microbial water quality profile (MWQP), based on a rolling set of water testing results. Since the quality of your ground or surface water may change during the growing season, it is best to test an initial sample, and then test follow-up samples (recommendation is four times during the growing season). These combined results will help give you a ‘water quality profile’ so you know what quality of water you are dealing with and if you need to take correction steps to improve the quality of your water.

Water used during growing activities can have a limited amount of E. coli present in the water, whereas water used during or after harvest must have no detectable generic E. coli present in a 100 mL water sample. We will talk more about water for post-harvest use in the next article. Water that contacts the harvestable part of the crop during the production stages must meet the following criteria:

- A geometric mean (GM) of 126 cells of E. coli per 100-milliliter sample of water. The GM represents a type of average value for the amount of generic E. coli in a water sample; and
- A statistical threshold value (STV) of 410 cells of E. coli per 100-milliliter sample of water. The STV reflects the level of variability in E. coli levels among the samples such as could happen when sporadic rain showers wash waste into rivers and creeks

Your water testing lab or local extension agent can help you calculate the GM and STV ‘combined values’. If your baseline water tests results are higher than the criteria above, then the cause of the deviation must be determined and corrective actions taken. You may treat the water, fix the issue if it is well or water-line related, or apply a timed interval (up to four days) between irrigation and harvesting. In addition to testing, you must conduct an annual inspection of your entire water system to determine any conditions that might lead to a contaminated water supply.
**VETERAN OF THE MONTH: JOSH MAPEL**

Josh Mapel didn’t set out to become a farmer. He grew up on a small farm in Grafton where he learned about animals and plants from his grandfather and great-uncle, but his real passions was airplanes. From the age of nine, Mapel wanted to work in aviation. And after graduating from Grafton High School, he turned that dream into a reality when he joined the Air Force and began working on B-1 bombers and C-17s in 2003. He spent 11 years in the military as a crew chief. But his military career came to an end in 2014 after a series of broken bones led to the discovery he had osteopenia.

“It’s similar to osteoporosis. My bones break really, really easily,” explained Mapel.

That led to a medical discharge from the Air Force.

“It’s not an easy thing to come out of, and then you try to figure out what you want to do. You’re so used to what you were before, which was working on airplanes. I didn’t want to give that up, so I went to work in the civilian sector. I wound up breaking another vertebrae carrying a box up a ladder. I sat in a chair for three months trying to heal. I came to the realization this is not going to work,” said Mapel.

He kept getting the same question from family and friends. “What are you going to do?”

“I didn’t know at the time,” said Mapel. “But my wife Kara and I were buying everything from the store from grass-fed beef to organic vegetables to try and keep me healthy and provide whole-some food for the table. We decided why not plant a garden, why not try to do it all ourselves?”

Mapel went back to school and graduated from WVU with a degree in agriculture and ex-
tension education and a minor in horticulture.

The family owns six acres of land in Simpson in Taylor County where they homestead. They have a garden, chickens, goats, three horses and a cow. It’s a busy life for Mapel who works full time at Micro-Genesis, a micro-greens business in Morgantown. But his new passion is taking care of the land.

“With our farm here, we’ve only been here a few years. We’re really just getting started, getting everything up and running. We’re trying to do a permaculture set-up. We use our goats to get rid of our weeds instead of going out and using chemicals. We also don’t use any heavy equipment. We don’t want to add to the compaction any more than the animals already are. The only pieces of equipment we use are a small lawn mower and my pick-up truck. Everything is rotationally grazed,” explained Mapel.

Because of his osteopenia, Mapel says he relies on his wife and oldest son Colton to help with some of the work. He says working as a unit they get it done. He compares the farm to his old job.

“Crew chief-wise you’ve got to be able to do a lot of stuff on airplanes. You have to be an electrician some days. Other days you have to be a hydraulics expert or a large airframe expert. On a farm, it’s really not that much different,” said Mapel. “Instead of an airplane you have a piece of property. You’re still in charge of everything. Some days you have to put on your plant science hat. Other days you’re using your animal science skills.”

Mapel joined the Veterans and Heroes to Agriculture program in 2020. He said his goal is to someday pass on the lessons he’s learned to others, especially his fellow veterans.

“Ultimately, that’s what the goal is. We want to teach people who have never done homestead-ing how to do it. It’s not tricky. It’s not hard. But you have to know what you’re doing to make it a success,” he stressed. “We want to educate folks in processing animals, rotational grazing for crops, common, easy fixes for farm equipment.”

Meanwhile, you’ll find Mapel and his family improving their homestead, one task at a time.

---

**Agricultural Water Rule, cont. from page 2**

These corrective actions are covered in more detail in the grower training I mentioned above.

Now for the caveats depending on how you are using the water and what crops you are growing. Agricultural water that touches/ will likely touch the ‘harvestable portion’ of a crop that ‘will likely be consumed raw’ must be of safe and of adequate sanitary quality (meet criteria as above). So, if you are using ground/spring water with drip irrigation, and the water will not likely touch the crop you are growing (tomatoes or peppers for example), or if you are not growing any roots crops that will be consumed raw (carrots for example), then your risks associated with poor water quality is lower because the water will not likely contact the harvestable portion of your crop. Testing in this situation is not necessary, but as we pointed out before, is recommended to establish the quality of your water. However, if you are growing a root crop that will be consumed raw, or if you are using an irrigation method where the water will touch pro-
duce that will likely be eaten raw, the water must meet the criteria above, or corrective steps are necessary to improve your water quality.

It is important to note that while most food safety tests are associated with presence/absence of generic E. coli, it is always advisable to test well or surface water in WV for presence of heavy metals, to establish whether the water is safe and of ade-
quate sanitary quality for agricultural uses.

We will discuss water used during post-harvest activities in Part 3 of this series on The Agricultural Water Rule.

Contact Dee Singh-Knights at 304-293-7606 or dos-
ingh-knights@mail.wvu.edu if you have any questions, or to reg-
ister for a Grower Produce Safety Training Course to learn more about this and other required trainings on how to comply with the FSMA PSR food safety requirements.

---

**KEEPING IT COOL**

The Importance of Dairy Refrigeration

Grade A milk is carefully produced, pasteurized and bottled in order to protect the safety of the consumer. However, pasteur-
ized milk can readily spoil and could cause foodborne illness if not properly refrigerated and handled. Refrigeration is one of the most important factors in maintaining the safety of milk. According to the FDA, Grade A milk must be maintained at a temperature of 45°F or below. Bacteria in milk will grow below 45°F, but at a very slow rate. However, tem-
peratures well below 40°F are necessary to protect the quality of the milk. It is critical that the milk’s temperature be maintained through distribution, delivery and storage.

The cooler refrigerated milk is kept, the longer it lasts and the safer it is. If the product warms up, bacteria will grow more rapidly.

In the hot, summer months, according to the Center for Disease Control, temperatures inside a closed car can reach in excess of 170°F. It’s important to carefully plan your trips to the store to prevent dairy products from sitting in a hot car. Make additional stops on an outing, before your final stop at the grocery or convenience store for milk.

Some tips to consider...

• Remember to bring a cooler and ice with you when you transport dairy products.
• When you arrive home, put away your dairy and perishable products first.
• Do not to leave dairy products out on the counter while cooking, as any elevated changes to the temperature will promote the growth of bacteria.
• Periodically check the temperature of your refrigerator, it should be at 40°F or below.
• Remember, when in doubt, throw it out!

Dairy products and other perishable food items that have been not been kept under adequate refrigeration could cause severe illness. Refrigerating perishable products is one simple way you can keep your family safe during the summer months!

For more information about the safe han-
dling of dairy products, contact the WVDA Dairy Program Manager Rachel Shockey at rshockey@wvda.us or 304-558-2226.
2020 WV Agriculture and Forestry Hall of Fame

The West Virginia Agriculture and Forestry Hall of Fame (WVAFHOF) Foundation has selected ten outstanding individuals for induction in 2020.

Enshrinement in the WVAFHOF is reserved for those individuals, businesses, organizations, institutions and foundations that have made outstanding contributions to the establishment, development, advancement and improvement of the agricultural, forestry and family life of West Virginia.

Mary Beth Adams
Mary Beth Adams is a leading authority on forest and soil ecology. A long-time USDA Forest Service employee, she has written nearly 160 papers, edited six scientific journals, sat on numerous committees, and served as adjunct faculty at multiple colleges and universities. Active in a wide variety of professional organizations, she helped organize many tours, workshops and presentations throughout West Virginia and the country. Her awards are numerous and she frequently plays the “Mouse King” in the Augusta Youth Ballet’s annual production of “The Nutcracker.”

Joe Gumm
A lifelong resident of Randolph County, he operated dairy and beef farms for many years. He has been extremely involved in conservation programs, serving as the President of the West Virginia Association of Conservation Districts, among many others. He is a founder and longtime supporter of the West Virginia Envirothon, North America’s largest high school environmental education competition.

Donal Michael
During his multi-decade career, he was the face of FFA in West Virginia and later served as the West Virginia Farm Bureau’s (WVFB) Director of Government Affairs. He was instrumental in the development of numerous agriculture education programs and is the recipient of many awards from FFA organizations and others.

Dr. Elaine Bowen
Dr. Elaine Bowen joined the WVU Extension Service and has dedicated her career to improving the health and well-being of West Virginia youth, families and senior citizens through numerous programs and campaigns. She cultivated many partnerships with other health organizations and initiatives to promote healthy lifestyles. She retired in 2019 and was promptly granted Faculty Emeritus status.

Patricia Gruber
Patricia R. Gruber has spent more than four decades working in Extension Service programs that aim to develop leadership skills and help families manage finances and health. She is a WVU Extension Service Associate Professor Emeritus, and is widely known for her work as State Advisor of the West Virginia Community Education Outreach Service (CEOS).

Terry Jones
Terry Jones has worked at a variety of forestry-related jobs throughout his career. An avid outdoorsman, he served as the Wildlife Staff Forester and National Forest Coordinator for the WV Division of Natural Resources for many years. He currently works as a forestry consultant through his firm, Rich Mountain Forestry LLC. The WV Forestry Association presented him with its Forester of the Year award in 2009.

Dr. Phillip Osborne
Dr. Phillip I. Osborne, WVU Extension Livestock Marketing Specialist and Professor Emeritus, transformed the production and marketing of West Virginia cattle by establishing quality assurance programs and leveraging new technology to market feeder cattle. He was instrumental in the establishment and operation of major cattle and livestock events, and has added millions of dollars in value to the state’s beef herd.

Ag & Forestry Hall of Fame Honors Three Historic Enshrinees

Three historic enshrinees are also being honored this year: Andrew Delmar Hopkins, a native of Jackson County, is considered the “father of forest entomology;” William McClellan Ritter is among West Virginia’s greatest lumbermen and businessmen and Jules August Viquesney was West Virginia’s first Forest, Game and Fish Warden.

Andrew Delmar Hopkins
William McClellan Ritter
Jules August Viquesney
Late Harvest Goodness

And just like that, summer is almost over and so are our gardens and farmers markets. But there’s still a lot of eating left to do and plenty of good things from the garden to harvest. This month’s recipes feature veggies that are in abundance – peppers and zucchini. Whether you’re mixing up something savory or something sweet, these two ingredients are the perfect addition to any recipe. If you have a recipe you’d like to share with us, send it to: marketbulletin@wvda.us.

Pepper Steak

- 2 pounds beef sirloin, cut into 2 inch strips
- 3 tablespoons vegetable oil
- 1 cube beef bouillon
- ¼ cup hot water
- 1 tablespoon cornstarch
- ½ cup chopped onion

In a large bowl, combine the zucchini, eggs, onion, flour, Parmesan cheese, mozzarella cheese, and salt. Stir well enough to distribute ingredients evenly. Heat a small amount of oil in a skillet over medium-high heat. Drop zucchini mixture by heaping tablespoonfuls, and cook for a few minutes on each side before turning. When cooked on both sides, remove from heat and keep warm. Mix the flour, salt, and white sugar with the hot water until dissolved, then mix in cornstarch until dissolved. Pour into the slow cooker. Stir in onion, green peppers, stewed tomatoes, soy sauce, sugar, and salt. Cover and cook on High for 3 to 4 hours, or on Low for 6 to 8 hours.

Zucchin Patties

- 2 cups grated zucchini
- 2 large eggs, beaten
- ½ cup chopped onion
- ¼ cup all-purpose flour

Sprinkle strips of sirloin with garlic powder to taste. In a large skillet over medium heat, heat the vegetable oil and brown the seasoned beef strips. Transfer to a slow cooker. Sprinkle strips of sirloin with garlic powder to taste. Mix bouillon cube with hot water until dissolved, then mix in cornstarch until dissolved. Pour into the slow cooker with meat. Stir in onion, green peppers, stewed tomatoes, soy sauce, sugar, and salt. Cover and cook on High for 3 to 4 hours, or on Low for 6 to 8 hours.

From the VET

A summer reminder for equine owners there are vaccines available that can protect against infection by West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE) viruses. These mosquito-borne diseases can cause serious neurological symptoms in horses and people. In recent months, there have been multiple neighboring states to West Virginia with reported equine cases confirmed by laboratory analysis. Large animal veterinarians can assist horse owners with vaccination programs and other preventive medicine recommendations.

GARDEN CALENDAR

SEPTEMBER 2020

Source: WVU Extension Service Garden Calendar

SEPTEMBER 1
Order spring-flowering bulbs.

SEPTEMBER 2
Plant crocus. Dig late potatoes. Turn compost. Save seeds. Seed cover crop.

SEPTEMBER 3

SEPTEMBER 4
Aerate lawn. Save seeds. Seed lettuce for Fall crop.

SEPTEMBER 5
Plant fall turnips and radishes. Seed carrots in high tunnel or cold frame.

SEPTEMBER 6
Plant hardy evergreens. Don’t let weeds go to seed. Sow sugar beets. Dig late potatoes.

SEPTEMBER 7
Build a cold frame. Water young trees and shrubs during dry periods. Plant elephant garlic.

SEPTEMBER 8
Harvest early pumpkins. Build a cold frame. Harvest early-planted sweet potatoes.

SEPTEMBER 9
Don’t let weeds go to seed. Control broadleaf weeds in lawn. Sow sugar beets. Dig late potatoes.

SEPTEMBER 10
Plant hardy evergreens. Seed scallions (bunching onions) in a cold frame. Sow sugar beets. Dig late potatoes.

SEPTEMBER 11
Control broadleaf weeds in lawn. Seed scallions (bunching onions) in a cold frame. Sow sugar beets. Dig late potatoes.

SEPTEMBER 12

SEPTEMBER 13
Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 14
Begin 14 hours of darkness to turn color of poinsettias. Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 15
Begin 14 hours of darkness to turn color of poinsettias. Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 16
Begin 14 hours of darkness to turn color of poinsettias. Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 17
Seed rye and hairy vetch for winter cover crop.

SEPTEMBER 18
Seed lettuce in high tunnel.

SEPTEMBER 19
Repot houseplants.

SEPTEMBER 20
Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 21
Take a fall soil test from lawn and garden.

SEPTEMBER 22
Autumn Begins. Plant shallots.

SEPTEMBER 23
Harvest early-planted sweet potatoes.

SEPTEMBER 24
Water young trees and shrubs during dry periods. Plant elephant garlic.

SEPTEMBER 25
Seed salad greens in high tunnel.

SEPTEMBER 26
Plant hyacinths. Harvest storage onions.

SEPTEMBER 27
Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

SEPTEMBER 28
Begin 14 hours of darkness to turn color of poinsettias. Begin pumpkin harvest. Seed fall spinach. Sow sugar beets. Dig late potatoes.

Zucchini Blueberry Bread

- 3 large eggs, lightly beaten
- 1 cup vegetable oil
- 2¼ cups white sugar
- 3 cups all-purpose flour
- 1 teaspoon salt
- 1 teaspoon baking powder
- 1 tablespoon ground cinnamon
- 1 pint fresh blueberries

Preheat oven to 350 degrees F. Lightly grease 4 mini-loaf pans. In a large bowl, beat together the eggs, oil, vanilla and sugar. Fold in the zucchini. Beat in the flour, salt, baking powder, baking soda and cinnamon. Gently fold in the blueberries. Transfer to the prepared mini-loaf pans. Bake 50 minutes in the preheated oven, or until a knife inserted in the center of a loaf comes out clean. Cool 20 minutes in pans, then turn out onto wire racks to cool completely.
## West Virginia Grown

**Rooted in the Mountain State**

### BARBOUR
- Sickler Farm
- Emerald Farms LLC
- Layne’s Farm

### BERKELEY
- Cox Family Winery
- Geezer Ridge Farm
- Kitchen’s Orchard & Farm Market
- Mountaineer Brand
- Raw Natural
- Sister Sue’s
- Taylor’s Farm Market
- US Veteran Produced
- West Virginia Pure Maple Syrup
- West Virginia Veteran Produced
- Wildflower
- Walnut Hill Farm
- Heron’s Rest Farm

### BOONE
- Anna Bell Farms

### BRAXTON
- Mary’s K9 Bakery
- Oh Edith/Little Fork Farm
- Rose Petal Soaps

### BROOKE
- Rose Petal Soaps
- Oh Edith/Little Fork Farm
- Mary’s K9 Bakery

### BRAXTON
- Anna Bell Farms

### BOONE
- Heron’s Rest Farm
- Walnut Hill Farm
- Heron’s Rest Farm

### CABELL
- Appalachian Apiculture
- Down Home Salads
- Good Horse Scents
- J & J Bee Farm

### CLAY
- Legacy Foods
- Ordinary Evelyn’s
- Sugar Bottom Farm

### DOORIDER
- Sweet Wind Farm
- Ryan Farms

### FAYETTE
- Butcher’s Apiary
- Almost Heaven Specialties
- Five Springs Farm
- Five Springs Farm Guesthouse
- Up The Creek
- Wild Mountain Soap Company

### GREENBRIER
- Arbaugh Farm
- Sloping Acres
- Hero Honey Valley View Farm
- TL Fruits and Vegetables
- Mountain State Maple Farm & Co.
- Daniels Maple Syrup
- Caring Acres Farm

### HAMPDEN
- Kismet Acre Farm
- Powder Keg Farms
- Quicken Farm

### HARRISON
- Buena Vista Farm
- Wardensville Garden Market
- Happy Ranch Farm LLC

### KANAWHA
- Angelos Food Products LLC
- Hamilton Farms
- Hernshaw Farms
- Lem’s Meat Varnish
- T & T Honey
- Vandalia Inc.
- Jordan Ridge Farm
- Larry’s Apiaries
- We B Fryin Snacks

### LEWIS
- Lone Hickory Farm
- Smoke Camp Craft
- Garten Farms
- Novak Farms

### LINCOLN
- Hill’ n’ Hollow Farm & Sugarworks
- Wilkerson Christmas Tree Farm
- Simply Hickory
- Estep Branch Pure Maple Syrup
- Ware Farms
- Berry Farms

### MARION
- Holcomb’s Honey
- Clutter Farms LLC
- Rozy’s Peppers in Sauce

### MARSHALL
- Hazel Dell Farm
- Eco-Vrindaban, Inc.
- NJ’s Kettle Corn
- Gieser Farm

### MASON
- Hope’s Harvest Farm LLC
- Moran Farms
- Black Oak Holler Farm LLC

### MECHESTER
- Hillbilly Farms

### MINERAL
- Indian Water Maple Company
- Green Family Farm

### MONONGAHELA
- The Kitchen
- Neighborhood Kombuchery
- WVU

### MONROE
- Spangler’s Family Farm
- Bee Green

### MORGAN
- Glasscock’s Produce
- Mock’s Greenhouse and Farm

### Nicholas
- Kirkwood Winery
- Woodbine Jams and Jellies
- Dave’s Backyard Sugarin’

### OHIO
- Dave’s Backyard Sugarin’
- Woodbine Jams and Jellies
- Kirkwood Winery
- Rock Valley Farm
- West Virginia Veteran Produced
- West Virginia Pure Maple Syrup
- West Virginia Grown
- US Veteran Produced
- Taylor’s Farm Market
- Sister Sue’s
- Raw Natural
- Mountaineer Brand
- Kitchen’s Orchard & Farm Market
- Mountaineer Brand
- Raw Natural
- Mountaineer Brand

### RANDOLPH
- Shrewsbury Farm
- Sweet Sweeney’s Honey
- The Farm on Paint Creek/
- Appalachian Kettle Corn
- Bailey Bees
- Appalachian Kettle Corn
- The Farm on Paint Creek/
- Sweet Sweeeneysburg Honey
- Daniel Vineyards
- Shrewsbury Farm

### RITCHIE
- Turtle Run Farm
- Christian Farm
- Grandma’s Rockin’ Recipes
- Missy’s Produce

### SUMMERS
- Sprouting Farms
- Cheyenne Farm

### TAYLOR
- A Plus Meat Processing

### TRUCKER
- Mountain State Honey Co. LLC
- R & A Honey Bees LLC
- Seven Islands Farm

### WAYNE
- Elmcrest Farm
- Stillner’s Apiaries
- Lovely Creations Handmade Soaps
- and More

### WEBSTER
- Williams River Farm
- Custard Stand Food Products
- Spillman Mountain Farm Products, Inc.

### WETZEL
- Thistledeed Farm
- Wetzel County Farmers Market

### WOOD
- In a Jam!
- Stomp-n-Grounds Craft Coffee
- Oldham Sugar Works
- Minner Family Maple Farm

### WYOMING
- Tarbilly’s BBQ
- Appalachian Tradition
Apriy Sales

Honeybee Equip.- extractor, 21-frame, elec. winstnd, elec. uncapping knife, comb foundation, solar wax melters on wheels, wooden wax melters, med. shallow, hive bodies, blocks of wax. James Copenaker, 6003 Thome Blvd Rd., Lost City, 26810; 878-2681.

Honeybees: Story and 1/2 2020 queens, $275, over 50 to choose from. Ben Hayes, 1761 Reedyville Rd., Spencer, 25276; 266-7269.

All bee colonies must be registered with the West Virginia Department of Agriculture. Please contact the Animal Health Division at 304-558-2214.

Cattle Sales

Reg. Scottish Highland 2-yr. bull, yellow, stout, good disp., grandson of Ridge Top MacDougall, was highlighted in the 2019 Celtic Cullin Festival, great hard sire potential, $1,200. Emily Arbyuck, 154k Seneca Trail N., Lewiston, 24901; 681-3531.

Reg. Polled Hereford 8-mo., 16-month heifers; reg. 5-yr. cows, 2-red, $800/up, all dark red, top blood, good disp. Roger Castro, 857 Raccoon Rd., Mineral Wells, 26150; 480-1692.


½ Hereford ½ Angus 300 bull calf, looks like Red Angus, $650. David Foley, 6073 Airport Rd., Sissonville, 26518; 670-7765.

Reg. Limousin 12-mo. bull, red, 95% pure, taller sired, more red, better bred, on state-maintained streams, well, septic, 2-story barn, equip. shed, 40 x 80 field, 20 A. pasture, fenced w/barb wire & elect., water, spring water, outbldgs., fruit trees, all acreage include the above. Advertisements for hunting land, commercial or city properties CANNOT be accepted.

Kanawha Co.: 97.9 A. w/house, lg. barn, out buildings, dig & dill well, free gas, farm equip., $300,000/obo. 1238 Windyville Rd., Spencer, 25276; 927-1171.

Greenbrier Co.: 22.6 A. w/house, well, gently rolling forested pasture or hayfields, spring water, outbuilds., fruits, all acreage front Rt. 21, $230,000. Kathryn Reynolds, PO Box 96, 24924; 498-4011.

Farming Co.: 105 A. w/house, 10 A. field, 20 A. pasture, fenced w/barb wire & elect., streams, well, 2-40 stck. barn, equip. shed, pond, cool climate, $22,000/obo. 2244 Reedsburg Rd., 26274; 680-1224. Ronald Shafer, 8430 Bucy Rd., Meadow Bridge, 25927; 494-7110.

Farm Wants

Want a farm barn, water, good sup. road access, near Clarksburg, must be within 2 hrs. of Pittsburg, PA. Ronald Shafer. 17498 N S 20 Rd, Meadow Bridge 25927; 494-7110.

Farm Sales

Boer/Nubian bucks, $250/up, Sarah Bowe, PO Box 1199, Franklin, 26687; 628-2956.


Boer cross nanny & billy kids, out of 100% full blood breed, 6-wk. old, $175 each, $1,000 total, fully vaccinated, $200/obo. Justine McPherson, 2835 Dry Fork Rd., Fairmont, 26554; 363-5757.


12 ft. 7-spool hay tedder, $3,300. Allen or Kim Miller, 364-5576; 500-5997. 340-T 4-spool hay tedder for parts. Jake Cuzzart Rd., Bruceton Mills, 26525; 698-7763.

Auctions:

WV POLLED HEREFORD ASSOC. FALL SALE September 26, 2020 6:00 pm Braxton Co. Fairgrounds Holly Gray Park, Sutton, WV Selling: 840 head - bred heifers, open heifers, & breeding bulls Contact, Ken Scott, 673-0844; Callie Taylor, 668-2102.

WV POLED HEREFORD ORG. 2020 Fall Sale September 26, 2020 6:00 pm Braxton Co. Fairgrounds Holly Gray Park, Sutton, WV Selling: 840 head - bred heifers, open heifers, & breeding bulls Contact, Ken Scott, 673-0844; Callie Taylor, 668-2102.

Event is tentatively scheduled for outdoors and social distancing will be observed.
Meadow mill stump or grinder. Harold Farnsworth, 38 Trainer Rd., Buckhannon, 26201.

Rabbits. Lisa Sheets, Rt. 1, Box 2, Dunmore, 24940; 456-4071.

Poultry WANTS

Silver Lace Windot or Domeck roosters. Sherley Morris, 150 Gray Crk. Rd., Leivasy, 26676; 331-0120.

Norwich Appaloosa, 24977; 445-1598.

C T West Virginia Feeder cattle and calf Sales

Special Graded Feeder Sales – Farm Fresh Cattle

Sponsored by: WV Livestock Auction Markets - WV Cattlemen’s Association - WV Department of Agriculture

TYPE OF SALE

LOCATION

DAY

DATE

TIME

NUMBER OF HEAD

PHONE NUMBER

C

Cattlemen’s Livestock Exchange

Jackson County

Saturday

Sept. 5

2 p.m.

500

647-5833

C

Cattlemen’s Livestock Exchange

Jackson County

Thursday

Sept. 10

11 a.m.

300

373-1249

C

Cattlemen’s Livestock Exchange

C T West Virginia Feeder cattle and calf Sales

Jackson County

Saturday

Sept. 5

3 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Jackson County

Thursday

Sept. 10

11 a.m.

300

373-1249

C

Cattlemen’s Livestock Exchange

Jackson County

Tuesday

Sept. 22

9 a.m.

1,000

472-5300

C

Cattlemen’s Livestock Exchange

Jackson County

Wednesday

Sept. 23

10 a.m.

600

373-1249

C

Cattlemen’s Livestock Exchange

Jackson County

Thursday

Sept. 24

12 p.m.

750

373-1249

C

Cattlemen’s Livestock Exchange

Jackson County

Friday

Sept. 18

2 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Friday

Sept. 18

2 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Saturday

Sept. 19

11 a.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Sept. 24

9 a.m.

1,000

472-5300

C

Cattlemen’s Livestock Exchange

Marlin County

Wednesday

Sept. 30

9 a.m.

600

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Friday

Oct. 2

9 a.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Oct. 8

9 a.m.

400

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Wednesday

Oct. 14

9 a.m.

600

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Tuesday

Oct. 13

9 a.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Oct. 8

11 a.m.

200

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Saturday

Oct. 10

9 a.m.

300

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Oct. 13

10 a.m.

1,000

472-5300

C

Cattlemen’s Livestock Exchange

Marlin County

Friday

Oct. 16

7 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Wednesday

Oct. 14

2 p.m.

300

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Oct. 8

9 a.m.

600

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Tuesday

Oct. 13

9 a.m.

200

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Saturday

Oct. 10

9 a.m.

1,000

472-5300

C

Cattlemen’s Livestock Exchange

Marlin County

Friday

Oct. 16

7 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Wednesday

Oct. 14

2 p.m.

300

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Thursday

Oct. 8

9 a.m.

600

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Tuesday

Oct. 13

9 a.m.

200

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Saturday

Oct. 10

9 a.m.

1,000

472-5300

C

Cattlemen’s Livestock Exchange

Marlin County

Friday

Oct. 16

7 p.m.

500

373-1249

C

Cattlemen’s Livestock Exchange

Marlin County

Wednesday

Oct. 14

2 p.m.