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Crop and Soil Environmental Science Extension Program in the Northern Shenandoah Valley

Progress Report
Clarke, Frederick, Page, Shenandoah and Warren Counties

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Graze 300 VA
Enhancing Cow-Calf Profitability through Better Grazing Management in the Northern Shenandoah Valley

⇒ The majority of cow-calf producers in the Northern Valley graze 220 days per year. Research and multiple on-farm demonstrations has shown that farmers can extend their grazing season to 300 days or more and **IMPROVE PROFITABILITY BY $50 TO $100 PER COW- CALF PAIR.**

In response, Extension started the Graze 300 VA initiative. Over the past four years Northern Valley Agents conducted seven educational meetings, nine field days; installed seven on-farm demonstrations, and made countless farm visits to teach farmers how to extend their grazing season.

To date 12 cow-calf farmers have extended their grazing season to at least 280 days or more. Compared to their peers; these 12 farmers have improved their net profitability by at least $50 per cow per year or $40,000 per year total.

Cattle Strip Grazing Stockpiled Fescue is one of the techniques used to extend the grazing season.

There are 1,300 cow-calf producers in the Northern Shenandoah Valley that own 42,000 cows.

Our goal is for 25% of these farmers (10,500 cows) to extend their grazing season to 280 days or 1 more.

This will improve their profitability by at least $525,000 per year.

We are also working with equine, sheep, and goat producers to teach them how to extend their grazing season. There are also significant water quality benefits from extending the grazing season that both improve local stream water quality (less nutrients and sediment in streams) and boost goal achievements for the Chesapeake Bay.

Through the Graze 300 VA Initiative, Extension Agents teach farmers how to graze through the snow.

Go to YouTube | Search "VCE Grazing Through Snow"

INCREASING NO-TILL TO IMPROVE FARM PROFITABILITY AND ENHANCE WAQTER QUALITY

When farmers plant crops without plowing/disking it is called “no-till.” Compared to conventionally planted crops (i.e. plowing/disking prior to planting); no-till is better for water quality because it reduces erosion and crop nutrient. No-till is more profitable because there is a higher yield potential and slightly lower input cost.

However, when farmers plant corn or soybeans no-till, slugs often feed on the emerging seedlings and cause significant stand loss. Farmers report that damage from slug feeding is one of the most significant factors preventing them from adopting no-till. There is 134,000 acres of corn and soybean in the Shenandoah Valley and at least 40,000 of these acres are planted using conventional tillage practices.

In 2019 Extension completed a two-year research project in the Northern Shenandoah Valley to evaluate how different management strategies impact slug feeding pressure. This study found there is a strong population of beneficial insects in the Northern Shenandoah Valley fields.

SIGNIFICANT

- This is significant because we now know that we do not need to import beneficial insects.

For example, when brown marmorated stinkbugs first arrived in the United States, there were no predators (beneficial insects) to keep the numbers in check.

Data from this study shows the use of pre-plant broadcast insecticides (i.e. insecticides that are applied with herbicides prior to planting or prior to crop emergence) is reducing the number of beneficial insects that feed on slugs. This is resulting in a higher population of slugs and in some years is resulting in a higher incidence of injury to corn and soybean crops.

Extension will work with area farmers and agribusinesses to eliminate the use of broadcast pre-plant insecticide applications in no-till corn and soybean crops. The short-term benefit will be that farmers will spend less money on insecticides. The long-term benefit will be that more farmers will be able to plant their crops no-till. There would also be major reductions in erosion and nutrient loss.

If half of the conventionally planted acres in the Shenandoah Valley were planted using no-till (20,000 acres) it would improve farm profitability by $40 per acre per year

Disaster Preparedness for African Swine Fever (ASF)

ASF could have a major negative impact on world pork supply. If ASF emerged in the United States, preventing its spread would in part, require destroying the virus inside swine that die to prevent it from spreading to other swine.

African Swine Fever (ASF) has continued to spread across China, many other far east countries, and a portion of Europe. Reports indicate that in China, the world's largest hog producer, 300 to 400 million pigs have died from the disease or have been killed to prevent it's spread.

Extension worked with a team of Agency and Industry representatives from the Virginia/North Carolina region to complete five field trials using composting to manage large numbers of swine carcasses.

Composting is being used more and more to deal with both routine and catastrophic loss of animals. For example, it is the preferred method of managing Avian Influenza outbreaks in the United States. Finally, we completed a literature review to better understand the ASF virus destruction.

As a result of these field trials, we have refined our equipment preferences and operating procedures for both handling the carcasses, and for compost windrow construction. Additional research is still needed as to whether or not the composting process will destroy ASF. However, all anecdotal evidence suggests composting will be a good option.

The techniques that we develop to manage an ASF outbreak will likely be the same techniques that will be used for disease outbreaks in other types of livestock.

Bobby Clark

"At the beginning of 2019 we (the national group focused on catastrophic livestock mortality disposal) had a few ideas as to how we would handle swine mortality if African Swine Fever hit the United States. By the end of 2019 we completed field tests and we are well on our way toward having an ASF mortality disposal plan. We also completed ASF mortality disposal field training for industry in the Virginia/Carolina region and plans are being made to do training in other parts of the United States."

Over 1,400 Attendees

Pesticide Certification Trainings

OVER THE PAST 4 YEARS, AGENTS IN THE NORTHERN SHENANDOAH VALLEY

- offered 17 different recertification training classes
- offered six training classes and testing opportunities for both farmers and commercial pesticide applicators to obtain licensure for applying pesticides.

Shenandoah County Sustainable Farm Demonstration

The Northern Shenandoah Valley has 150,000 acres of rented farmland. Most of this land is under short-term lease arrangements. Rented farms often become run-down because neither the farmer, nor the landowner, is willing to make investments to improve the land.

The Shenandoah County Sustainable Farm Demonstration was initiated to show farmers and landowners how they can work together to revitalize a farm using practices that are environmentally sound and profitable for both the farmer and the landowner.

Over the past eight years, this 151-acre farm demonstration site has been improved with new fences, barn repairs, grassed waterways, improved pastures, and more.

The results have been shared with more than 1,000 farmers and landowners.

Revised farm leases that stem from this program often include a multiyear lease arrangement and an overall structure that enable both farmers and landowners to achieve long term success.

Shenandoah County Farmers Receive Top Honors:

In 2019, Shenandoah County farmers received top honors for their corn and soybean yields.

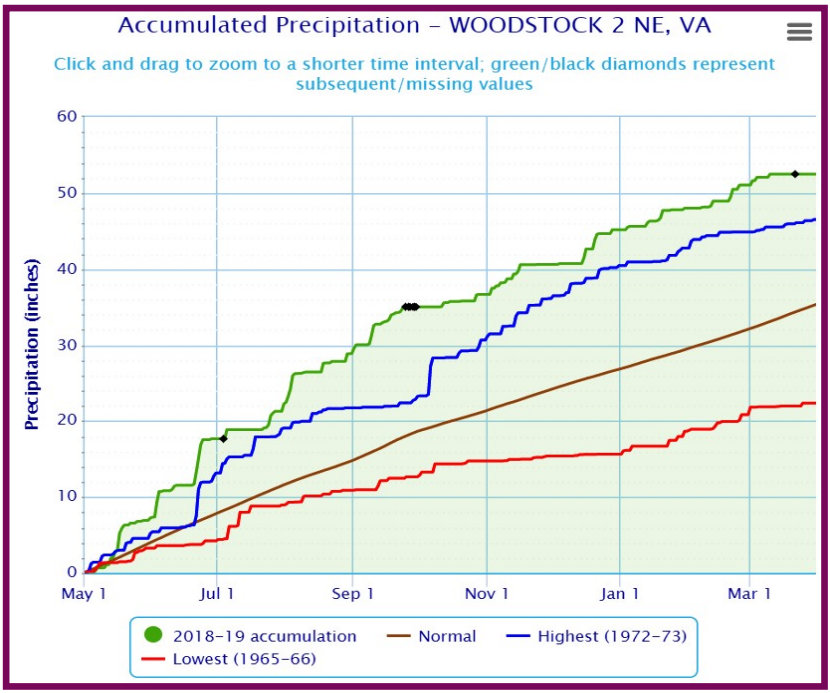
State Winners in National Corn Growers Association and Virginia Soybean Yield Contests

Farmer	Category	Yield (Bu./Acre)	State Rank
Guy Gochenour	No-Till Corn Non Irrigated	306.323	First
Timmy French	No-Till Corn Non Irrigated	295.7821	Second
Shane Richmond	No-Till Corn Non Irrigated	266.7424	Third
Timmy French	Ridge-Till Corn Non Irrigated	292.1215	Second
Brett Wightman	*Irrigated Soybean*	*83.78*	*Third*

Agriculture Damage Assessments

Over the past 3 years, Extension performed five different damage assessments for Page and Shenandoah Counties:

- ⇒ Extreme Wet Conditions in the Winter of 2018/2019
- ⇒ Extreme Dry Conditions in the fall of 2019
- ⇒ Dry Wells in January 2018
- ⇒ Extreme Wet Conditions from May 2018 through Fall 2018
- ⇒ Dry Weather in the Summer of 2017



Record Rainfall from May 2018 through March 2019 damaged crops and had negative health impacts on livestock over the entire region. (Credit National Weather Service Sterling VA)

Extension worked with Synagro and Clermont Farm to install an On-Farm Demonstration showing how to use granulated biosolids to grow stockpiled fescue.

Before and After of gully erosion on the county farm

Bob Peer and Gary Flory (VA DEQ) install an Above Ground Burial Demonstration with Rob Mikins (USDA APHIS)

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