



# Shore Conserver

Eastern Shore Soil and Water Conservation District

*promoting locally led conservation*

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## **The Importance of Crop Residue**

*by Janelle Atyeo, for South Dakota Soil Coalition, modified by Julie Head*

### **Residue helps farmers save on water and fertilizer costs**

What's left behind after a cash crop can be pretty valuable if it remains in the field. South Dakota farmers see a range of benefits from crop residue - corn stalks, soybean stems, and wheat straw left after harvest - especially in a dry season.

It can be tempting to cut corn for silage or bale oat straw when yields and income come up short, but there are major costs to removing residue. In northeastern South Dakota, farmer Dave Kruger planted soybeans on light, sandy ground and watched them burn up in last summer's heat. Across the road, soybeans planted in the same sandy soils held on.

The difference was the second field of beans grew through a thick mat of rye straw. It took another two to three weeks to see signs of heat stress, Kruger said. Residue's role in moisture retention is two fold. It acts like a lid, keeping soil covered and moisture from escaping. It also helps build organic matter and carbon, which in turn increases the soil's capacity for holding water. "Crop residue has helped the crop to hold on and survive through drier spells," Kruger said.

### **Removing residue removes nutrients**

It wasn't a great year for small grains in central South Dakota. Marvin Schumaker, who farms north of Pierre, had to abandon one of his oat fields because the grain just didn't fill in during the hot, dry summer. "It's been a tough year," said Schumacher. Even so, he left the failed oats instead of putting them up for hay. "I hate to remove residue anytime if I can help it. What you lose for residue doesn't pencil out," he said.

Some of the most concrete costs of removing residue come from the nutrients that must be replaced when straw and stalks are baled up and hauled away. A ton of dry harvested residue contains 27 pounds of nitrogen, 4 pounds of phosphorus, 34 pounds of potash, and 3 pounds of sulfur according to research from the University of Nebraska - Lincoln. At today's fertilizer prices, each round bale of corn stalks would add up to \$32.61 worth of fertilizer (as of August 2021). The nutrient values of wheat straw and soybean residue are a little less, with 1 ton of wheat or bean stubble worth about \$20 of fertilizer.

Those numbers align with what Kruger has experienced on his farm. He has four quarters of ground that have been managed with continuous light tillage. While most of his ground has been no-till since 1993, those acres serve as a good side-by-side comparison. When it comes to fertilizer, his no-till land saves \$20-30 per acre per year. "I think that's the result of building that organic matter," he said, "When you take any of the straw or the residue, you're just carrying more fertilizer off the fields."

Producers should consider the long-term impact of removing residue, said Dwayne

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# Soil Residue .... continued

Beck, a soil health expert who manages the Dakota Lakes Research Farm near Pierre. "When you take off residue and don't replace it, that's a permanent thing. It takes a long time to recover from that," he said.

## **Cover crops, diverse rotation can help**

When crop residue is baled and removed from the field, that takes a lot of potential residue out of the mix. A high-residue cover crop planted behind the silage cutters can stem those losses, Beck said. Winter wheat, vetch, tillage radish, and cereal rye are all good options.

He also urges producers who remove field residue to consider changing their rotation if they were going to plant soybeans the following year. Growing a high residue cover crop would be more appropriate. You've turned a high-residue crop, corn, into a low-residue crop. With two low-residue crops in a row, it could cause some real issues,' Beck said. "The worst thing you can do to a piece of ground is to take the forage off year after year." According to Beck, the best rotations are made up of 80% high-residue crops such as corn, wheat, and other cereal grains.

## **Saving water**

Combining his oats in South Dakota this summer, Clint Vanneman could look down the row and see residue from the previous milo and wheat crops. Those layers of cover helped to hold moisture and insulate the ground. "The ability to save some of it for a dry day is big," said Vanneman, who farms with his son Justin.

No-till management, residue, cover crops, and a diverse crop rotation work together on the Vanneman farm to build soil health. They've been able to reduce applied nitrogen as their organic matter has climbed.

Carbon feeds a thriving community of micronutrients below ground, and that contributes to a healthy soil structure with stable pores that can move water through the soil profile. "That's where you get your water infiltration and your root development," Schumacher said.

Reducing runoff helps keep nutrients in place. A residue cover also saves valuable topsoil from wind erosion. Schumacher pays close attention to soil cover in his rotation. He plants two years of corn to build residue and rotates to soybeans, wheat, then a cover crop before going back to corn.

Planting through heavy residue can be a problem, which is why his planter is equipped with a trash manager that moves the residue to the side as he makes his furrow. The cover also cools his soil in spring, so his crops start slower. "They will look a little worse at the beginning, but by mid-summer, they really start to shine," he said.

Schumacher sees the benefits of a residue cover in his irrigated fields, saving him 4 - 6 inches of water a year. "It's cut our water use by a third with no-till management and residue cover," he said.

When it comes to cover crops and residue, bigger is better. Over the winter months, soil cover catches snow and holds moisture. The Vanneman farm didn't get much snow last winter, but milo stalks caught what fell, and the oats planted into those stalks in early spring reaped the benefits. Some farmers are harvesting small grains with a stripper head so the straw is left standing in the fields. "There's a lot of value in leaving it on the ground," Vanneman said.

*reprinted with permission from the South Dakota Soil Health Coalition*

# VA Tax Credit Changes

## NEW Changes to VA TAX Credit Program for VA Producers

The 2021 VA General Assembly and Governor significantly increased tax credits in the Commonwealth for no-till and precision agricultural equipment as well as agricultural water quality best management practices.



### Agricultural Best Management Practices (BMP) Tax Credits:

Producers may take a credit against state income tax for actual out-of-pocket expenses for agricultural BMPs. An enhanced rate is also available for producers implementing a Resource Management Plan (RMP):

- 50% tax credit up to \$50,000 cap per individual for BMPs implemented on acreage included in a District approved RMP in implementation stage or beyond.
- 25% tax credit up to \$25,000 cap per individual for BMPs implemented on acres not eligible for the enhanced RMP tax credit.

The total amount of tax credit may not exceed \$75,000. If the amount of tax credit exceeds the taxpayer's liability in a taxable year, the excess shall be refunded to the taxpayer by the Virginia Department of Taxation. Tax credits must meet practice criteria and must be approved by the District Board. Agricultural operators' BMPs, if approved, will be inspected by the SWCD after installation.

By January 31st, for those approved for tax credits, the Eastern Shore SWCD will send VA Form ABM (partially filled), Tax Credit Certification Letter, Approved Conservation Plan Verification Letter (if applicable), RMP Verification Letter (if applicable), Nutrient Management Plan Verification Form to be filled in by Producer and NMP planner. The producer's Statement/ Invoice/ Receipts must accompany application and supporting documents. In order to claim the tax credit, taxpayers must submit the application with all supporting documentation to the Virginia Department of Taxation by April 1.



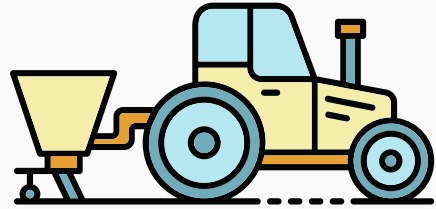
The total credit granted to all taxpayers is limited to \$2 million for each fiscal year so, if the total qualifying credits exceed this amount, each taxpayer's credit will be prorated. Notification of the authorized credit amount must be received before the credit can be claimed on the taxpayer's tax return

# VA Tax Credit Changes Continued

## Equipment Tax Credits:

There is also a tax credit to encourage farmers to use conservation equipment. Currently an Equipment tax credit is available for the purchase of no-till or precision agriculture equipment. Equipment eligible for this tax credit may include:

- Sprayers for pesticides and liquid fertilizers
- Pneumatic fertilizer applicators
- Monitors and flow regulators
- Manure applicators
- Tramline adapters
- Starter fertilizer banding and in-furrow attachments for planters
- Variable-rate application equipment using spatial positioning systems
- A planter, drill, or other equipment, commonly known as a “no-till” planter or drill, used to reduce soil compaction
- Other equipment used to reduce soil compaction, including guidance systems to control traffic patterns in order to minimize disturbance of the soil in planting crops. This includes such planters and drills, which may be attached to equipment already owned by the taxpayer, and other equipment designed to reduce soil compaction.



Individuals may claim a state tax credit of 25% of all expenditures made for the purchase and installation of equipment not exceed \$17,500 per individual/entity and must meet state-established criteria. More details can be found on the [here](#). The Equipment Tax Credit is retroactively available for the taxable year beginning January 1, 2021, through December 31, 2021.

The District will provide the VA Form AEC for producer to fill in, Nutrient Management Plan Verification Form to be filled in by Producer and NMP planner, Approved Conservation Plan Verification Letter. Producer's Statement/ Invoice/ Receipts must accompany application and supporting documents. The application and all supporting documents must be sent to the VA Department of Taxation at least 90 days upon which the tax credit will be claimed is due.

**The Eastern Shore SWCD is not permitted to provide any tax advice. This article is being provided only to educate readers of the new tax credit changes in VA. The responsibility of completing the application falls on the producer/ tax pre-payer. For more information please watch [https://www.youtube.com/watch?v=Uv5\\_XqYCNj0](https://www.youtube.com/watch?v=Uv5_XqYCNj0)**





# Water Wise Home Challenge



## Protecting Our Planet Starts with You!

Take the Water-Wise Home Challenge from the Eastern Shore Soil and Water Conservation District and see how you can help protect our natural resources.

### Do your part!

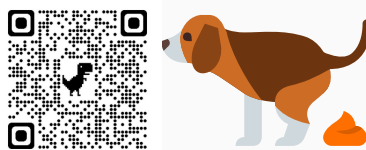
Everyone has a part to play in protecting our natural resources. Adopt at least three of the challenge actions to receive your Water-Wise Home garden flag or sign to proudly display on your property.

## Water Wise Home Challenge – scan the QR code for more information!

### Plant a Pollinator Pocket



### Commit to Scoop the Poop



### Install a Rain Barrel



### Participate in a Litter Clean-Up Day



### Start a Vermicomposter



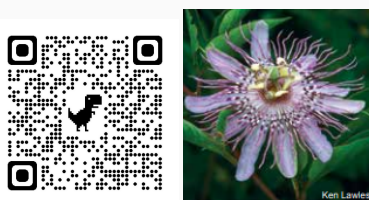
### Reduce or Eliminate Your Use of Fertilizer or Pesticides



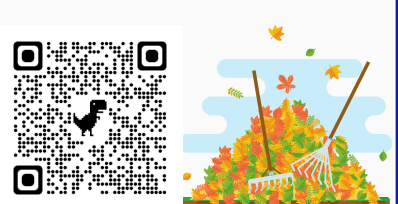
### Install Conservation Landscaping



### Plant Three Native Plants



### Mulch Leaves and Grass



### Claim Your Flag

Once you have adopted at least three of the action challenges, let us know about it. Contact us at [julie.head@esswcd.org](mailto:julie.head@esswcd.org), and we'll send your flag or sign. Please allow several weeks for delivery.

While we encourage everyone to participate in the Water Wise Home Challenge, yard flags and signs are only available to residents of Accomack and Northampton Counties

The Commonwealth of VA supports the Eastern Shore SWCD through financial and administrative assistance provided by the VA Soil and Water Conservation Board and the Department of Conservation and Recreation.

Eastern Shore SWCD programs, activities and employment opportunities are available to all people regardless of disability, race or color, national origin, traits historically associated with race or religion including traits associated with hair, religion or creed, gender, gender identity, sexual orientation, age, pregnancy status, childbirth or related medical conditions, marital status, veteran status, whistleblower status or genetic information.