

**Cover Crop/ Nutrient Management Ag BMP TAC Sub-committee Meeting**

**August 30, 2023**

**Town of Orange Public Works Community Building**

**235 Warren St.**

**Orange, VA 22960**

**10:00am – 3:00pm**

**OPENING AND INTRODUCTION**

The Cover Crop and Nutrient Management Subcommittee meeting was called to order at 10:02am. A quorum of 11 voting members was present. Ms. Marie Schirmacher, VA-DCR welcomed those in attendance and asked for introductions. Once introductions were complete, Ms. Schirmacher discussed the workflow plan for the day.

**ATTENDANCE**

**Voting Members Present**

Marie Schirmacher, DCR  
Allyson Ponn, Lord Fairfax SWCD  
Alston Horn, Chesapeake Bay Foundation  
Bryan Johnson, Virginia Farm Bureau  
Buck Tharpe, Southside SWCD  
Leigh Hubbard, Virginia Grain Producers Association  
Hubert Bowman, Blue Ridge SWCD  
Kemper Marable, Hanover-Caroline SWCD  
Megan Trice, Shenandoah Valley SWCD  
Reed Felts, Peanut SWCD  
Steve Jones, John Marshall SWCD

**Voting Members Absent**

Spencer Yeager, Culpeper SWCD

**Non-Voting Participants**

Amy Walker, DCR  
Bob Waring, DCR  
Marissa Roland, DCR  
Olivia Leatherwood, DCR  
Chris Coggin, Shenandoah Valley SWCD  
Gary Cross, Chowan Basin SWCD  
Haywood Owens, Chowan Basin SWCD  
Hunter Gravatt, Hanover-Caroline SWCD  
Michael Tabor, Blue Ridge SWCD  
Shelby Foonsness, Shenandoah Valley SWCD

### Set future meeting dates

Ms. Schirmacher asked members for availability for a second and third committee meeting. It was decided Ms. Schirmacher would coordinate the next date via online poll.

**Please see the Cover Crop/Nutrient Management subcommittee matrix items referred to in the next section (Attachment 1).**

### Review of Cover Crop/ Nutrient Management Matrix items

**12C.** The subcommittee reviewed item 12C, which suggested reviewing the nutrient management specifications that reference pre-sidedress nitrate tests and soil nitrate testing for consistent language. There was discussion from the subcommittee that the nomenclature for the two tests is seasonally appropriate, thus there was no need for changes to the referenced specifications. The subcommittee motioned to table matrix item 12C. ***The motion passed unanimously 11 to 0.***

**4C.** The subcommittee reviewed item 4C, which suggested reviewing the language in SL-8M specification sections B.2 and B.5 to edit for clarity. The subcommittee reviewed the SL-8M specification language and motioned to make the appropriate edits. ***The motion passed unanimously 11 to 0 to advance to the full TAC with appropriate edits.***

**13C.** The subcommittee reviewed item 13C, which suggested reviewing all nutrient management specifications for consistency regarding samples fee and number of acres/fields to be covered by a single test. The subcommittee discussed the differences between specifications. The consensus of the subcommittee was to discuss item 13C further at the next meeting in order to give DCR time to gather appropriate information from the specifications for the committee to review.

**17C.** The subcommittee reviewed item 17C, which suggested editing the NM-5N rates section regarding hayland applications to be consistent with the policies and specifications section. The subcommittee discussed the language differences regarding haylands in the two sections. The subcommittee motioned to update the language in the NM-5N rates section to mirror the policies and specifications language regarding haylands, which states, “v. Two or more applications of nitrogen on highly managed hayland production systems (other than alfalfa, which is not eligible)”. ***The motion passed unanimously 11 to 0.***

**18C.** The subcommittee reviewed item 18C, which suggested updating the NM-6 specification to specify multiple injections should be paid under one contract. It was recently clarified by DCR’s Agricultural Incentives Program Manager that the NM-6 allows payment for multiple injections on the same field in one program year. The subcommittee discussed this, as well as the potential of holding up a producer’s payment when paying for this under one contract. The consensus was to verify with the Agricultural Incentives Program Manager at DCR and revisit this item at the next meeting.

**19C.** The subcommittee reviewed item 19C which suggested replacing the requirement in the WFA-NM specification to verify implementation with the nutrient management plan implementation policy to be consistent with the other nutrient management specifications. Ms. Schirmacher pointed out the document DCR-231 listed in the specification should be DCR-244. The subcommittee discussed the NM-3C specification (and other NM specifications), which includes the standard language for producer implementation. The subcommittee motioned to update the language in the WFA-NM specification with that found in the NM-3C. ***The motion passed unanimously 11 to 0 and will advance to the full TAC.***

**23C.** The subcommittee reviewed item 23C, which suggested revising the NM-5N B.3 to clearly distinguish between pre-sidedress nitrate tests and tissues samples. The subcommittee motioned to remove “plant tissue samples or petiole samples” for clarification. ***The motion passed unanimously 11 to 0 and will advance to the full TAC.***

**24C.** The subcommittee reviewed item 24C, which suggested a report from the NM-5SH Soil Test Biological Activity (STBA) pilot project. Ms. Schirmacher gave an update on the timeline project and stated Nutrient Management Specialists are waiting for corn to be harvested. There will be a report on the project at the full TAC.

**1C.** The subcommittee reviewed item 1C, which suggested revising cover crop rates to incentivize mixed species over pure rye. Ms. Schirmacher reminded the subcommittee the VACS program is a water quality program and decisions have to consider water quality. Additionally, DCR and the TAC’s info comes from Land Grant Universities and the research they conduct. The subcommittee discussed the article included in the suggestion. Please see Attachment 2. The article states the planting dates are not viable south of Maryland, however there was discussion this system could benefit those the Shenandoah Valley. There was discussion from the committee regarding the amount to pay per acre. Ms. Walker reminds the subcommittee to take into consideration what the Chesapeake Bay Model accepts in its current version. She suggested presenting this information to the Agricultural Workgroups for possible inclusion in the model updates. The subcommittee motioned to defer item 1C to the CY24 TAC cycle in order to gather more information from land grant universities and discuss the potential credit in the Bay Model with agricultural workgroups. ***The motion passed unanimously 11 to 0.***

**8C.** The subcommittee reviewed item 8C, which suggested grouping triticale with rye for the extra incentive payment in the SL-8B specification. Mr. Gary Cross from Chowan Basin SWCD presented his experience as a producer planting triticale and the benefits he has received. District staff on the subcommittee shared their experience in the field and shared triticale is becoming a more popular cover crop option. The subcommittee discussed its inclusion and potential rates for payment. The subcommittee discussed getting additional research information from Dr. Hunter Frame. The subcommittee also discussed what potential credit triticale could receive in the Chesapeake Bay Model. The subcommittee motioned to defer further discussion of item 8C to the next meeting in order to gather more information about triticale and potential credit in the Bay Model. ***The motion passed unanimously 11 to 0.***

Mr. Kemper Marable asked for more information about the Ag Workgroup. Ms. Walker and Mr. Waring explained it is a multi-state effort. One of Virginia’s representatives is DCR Nutrient Management Specialist Robert Shoemaker.

**2C.** The subcommittee reviewed item 2C, which suggested adding legumes into the Description and Purpose of the NM-3C specification. The subcommittee discussed the current language of the specification and the current research from Virginia Tech regarding nitrogen contributions from legumes. The subcommittee motioned to edit suggested language and insert “or have a high biomass legume cover crop” into the NM-3C specification. ***The motion passed unanimously 11 to 0.***

**3C.** The subcommittee reviewed item 3C, which suggested adding the SL-8A and NM-7 specification into the WFA-CC practice suite. The subcommittee discussed the Whole Farm Approach and its original design. The WFA was designed to capture the most common agronomic practices. The subcommittee

further discussed the SL-8A and NM-7 and how uncommon the practices are across the state. The subcommittee motioned to table item 3C. ***The motion passed unanimously 11 to 0.***

**5C.** The subcommittee reviewed item 5C, which suggested the committee consider removing the one-time payment per owner under the SL-1 specification. Ms. Schirmacher reminds the subcommittee the intent of SL-1 practice is a long term conversion from crop to hayland. The subcommittee discussed the credit the SL-1 receives in the Bay Model. In the CY22 TAC cycle, the subcommittee added in an additional lower lifespan to the practice. The subcommittee motioned to table item 5C. ***The motion passed unanimously 11 to 0.***

**20C.** The subcommittee reviewed item 20C, which suggested adding a practice to re-enroll or capture existing grassland that was converted from row crop. This suggestion was deferred by the CY22 committee. The specification is currently in process and will be presented at the next meeting.

**6C.** The subcommittee reviewed item 6C, which suggested revising WFA-NM and WFA-CC rates to match non-WFA cost-share rates. The subcommittee discussed how it is more beneficial for some producers doing a high level of managing manure, nutrients, and cover crop to sign up under non-WFA practices. The subcommittee asked DCR staff to pull the rates of practices included in the WFA and compare to non-WFA practices to present for comparison and discussion at the next meeting.

**7C.** The subcommittee reviewed item 7C, which suggested an increase on the cost cap for nutrient management practices. The subcommittee discussed the suite of nutrient management practices and their respective rates. The subcommittee asked DCR to provide comparison of rates between the WFA and Nutrient Management specifications with the exclusion of the NM-1A, which is paid at a flat rate.

**9C.** The subcommittee reviewed item 9C, which suggested including a precision soil sampling program in the VACS program. Mr. Cross presented the subcommittee with information from his experience as a producer and District Director running a sampling program in Chowan Basin SWCD. The subcommittee discussed the VACS program and its goal of direct water quality. The subcommittee also discussed the NM-5N and NM-5P as already available precision nutrient management practices that pay for application of nutrients, that the rates of these practices could be reviewed. Mr. Hubert Bowman stepped out of the room. The subcommittee motioned to table item 9C to create a new specification. ***The motion passed 10 to 0 with 1 abstaining.***

Mr. Bowman returned to the room.

**10C.** The subcommittee reviewed item 10C, which suggested adding a cost-share practice for electrical conductivity (EC). Mr. Cross presented information to the committee on electrical conductivity. He urged the committee to incorporate modern technology and advancements into the VACS program. Mr. Waring spoke to EC testing's value and reminds the subcommittee of the goals of the VACS program as a direct water quality benefit. The subcommittee discussed inclusion of EC into the NM-5N or NM-5P specifications. There was further discussion from the committee about when EC testing should be done, as well as creation of a new specification in place of editing an existing specification. The subcommittee motioned to continue discussion on item 10C to the next meeting. ***The motion passed unanimously 11 to 0.***

The subcommittee broke for lunch at 12:04pm. Ms. Leigh Hubbard left the meeting at 1pm. The subcommittee reconvened at 1pm and continued discussion of the remaining matrix items.

### **Continue review of Matrix items by subcommittee**

**11C.** The subcommittee discussed item 11C, which suggested raising cost-share rates for SL-8M, SL-8H, NM-7, and WQ-4 to be in proportion with SL-8B. The subcommittee discussed the raise in cost-share rates on the SL-8B and how previously the other cover crop practices were in proportion based on credit in the Bay Model. The subcommittee also discussed the raise was an action from the Virginia Soil and Water Conservation Board, not the subcommittee. Ms. Walker discussed how credit in the Bay Model correlates to payment rates as well as the creation of the SL-8M was an opportunity for those applying manure to get more acres and bring in niche practices. The subcommittee asked DCR to gather additional information on the payment rates of the listed practices as well as credit in the Bay Model and present at the next meeting.

**14C.** The subcommittee discussed item 14C, which suggested including ESN: Smart Nitrogen as eligible for the first split pre-planting of corn or cotton. The subcommittee discussed the availability of ESN/Smart Nitrogen. The product listed in the suggestion is only available at Nutrien. There was further discussion that other versions of the products have lower than intended percentages of inhibitors thus making the product ineffective. The subcommittee motioned to table the item. ***The motion passed unanimously 10 to 0.***

**15C.** The subcommittee discussed item 15C, which suggested developing a Best Management Practice (BMP) for application of compost on cropland. Please refer to attachment 3 for the draft specification. Ms. Schirmacher again emphasized the goal of VACS as a direct water quality benefit. The subcommittee discussed the nutrient recommendations, which are higher and out of line with the Virginia Nutrient Management Recommendations. The subcommittee also discussed compost had an unknown release value. The subcommittee motioned to table item 15C. ***The motion passed unanimously 10 to 0.***

**16C.** The subcommittee reviewed item 16C, which suggested establishing a higher rate for legume cover crops such as vetch, and/or offering additional incentives for cover crops with significant amounts of biomass in the spring. The subcommittee discussed item 16C in two parts – **part i** discussing a higher rate for legume cover crop, and **part ii** offering incentives for high biomass cover crop. The subcommittee discussed legume cover crops, their production of nitrogen, and their low biomass. There was also discussion regarding the decreased Bay Model credit for legumes versus rye. The subcommittee discussed the late kill down date in the WFA. The subcommittee motioned to table **part i** of item 16C because of the low amount of credit received for legumes. ***The motion passed unanimously 10 to 0.***

The subcommittee discussed **part ii** of item 16C. The subcommittee reiterates the WFA addresses high biomass cover crop by including an incentive of \$10/acre for a late kill down. There was further discussion of updating cover crop specifications to include this incentive for Districts and producers not in the WFA program. The subcommittee motioned to defer further discussion to the next meeting upon receipt of data from Districts participating in WFA regarding killdown and information from the Agricultural Incentives Program Manager. ***The motion passed unanimously 10 to 0.***

**21C.** The subcommittee reviewed item 21C, which suggested including variable rate lime and potash in the VACS program. The item was deferred from the CY22 TAC subcommittee. The subcommittee discussed lime and potash as indirect water quality benefits and more in line with soil health programs. The subcommittee did not wish for VACS to compete with NRCS programs. The subcommittee motioned to table item 21C. ***The motion passed unanimously 10 to 0.***

**22C.** The subcommittee discussed item 22C, which suggested language edits to the SL-15A for producers utilizing peanuts and cotton in their rotations. This item was deferred from the CY22 TAC subcommittee. The subcommittee discussed management of peanuts and cotton, and the issues associated with maintaining cover during harvest. There was also further discussion about the desire to involve these producers in residue and no-till practices. The subcommittee discussed excluding the date requirement in the language provided and utilizing the regular cover crop planting dates. The subcommittee discussed what credit was available in the Bay Model. The subcommittee motioned to defer discussion until the next meeting so more information could be gathered and presented to the subcommittee. ***The motion passed unanimously 10 to 0.***

The subcommittee reviewed the late submission, which suggested adding cotton into the NM-3C specification. The subcommittee discussed the WFA originally included cotton and was removed when the specification was split into nutrient management and cover crop. The subcommittee motioned to reword the NM-3C and WFA-NM specifications to include cotton. ***The motion passed unanimously 10 to 0.***

#### **Public comment/questions**

Mr. Cross addressed the subcommittee. He enjoyed the conversation and appreciated the considerations for producers. He expressed how row cropping requires so much time it's hard to get representation at different organizations. Mr. Cross thanked the committee for their work and allowing him to join the conversation. Ms. Schirmacher thanked the committee for their work as well.

#### **Next Meeting**

Ms. Schirmacher reminded the subcommittee she will be sending out an online poll to determine the next meeting date.

#### **Adjourn**

The subcommittee motioned to adjourn at 2:05pm. ***The motion passed unanimously 10 to 0.***

Attachment 1

**MATRIX OF ADVANCED COVER CROP NUTRIENT MANAGEMENT RECOMMENDATIONS FOR CALENDAR YEAR 2023 (CY23) TAC**

Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
1C		<p>Revise cover crop rates to incentivize mixed species over pure rye. Research shows early planted mix of brassica and rye takes up more nitrogen than rye alone</p> <p><a href="https://access.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jeq2.20342">https://access.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jeq2.20342</a></p>			
2C	NM-3C	<p>Consider adding legumes in the Description and Purpose of the NM-3C. Suggested language for paragraph 2 “For fields that have previously received manure or biosolids applications according to the current NMP or have a history of high biomass legume cover crops...” Virginia Cooperative Extension recently updated their Nitrogen Soil Testing for Corn in Virginia publication (Publication #418-016) to reflect Nitrogen contributions from legumes.</p>			
3C	WFA-CC	<p>Consider adding all cover crop practices including the SL-8A and NM-7 as part of the WFA- CC practice suite.</p>			
4C	SL-8M	<p>Review language in SL-8M B.2 and B.5 and edit for clarity.</p>			
5C	SL-1	<p>Consider removing the restriction in the SL-1 specification listed in B-5, only allowing payment once under the same ownership. There are</p>			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		considerable nutrient and sediment load reductions associated with this practice and that we are missing capturing due to the restriction. Furthermore, this is the only agronomic practice that has this restriction.			
6C		Revise WFA NM and CC rates to match regular cost share practice rates. Current WFA rates hinder implementation of the practice for producers who are managing their manure, nutrients and cover crops at a high level. For example: if a producer signs up for PSNT, 2 seasons of manure injection and cover crop, the WFA payment is less than the payment that they could receive if they signed up for the regular cost share practices. Several of the cover crop rates in WFA match regular cover crop rates, while others do not match.			
7C		Consider increasing the cost cap for the various nutrient management practices (ie: NM3C, NM1A, NM5N, NM5P, NM4 and NM6).			
8C	SL-8B	Triticale should be grouped with rye for the extra incentive payment for SL-8B cover crop. Triticale, like rye, has an excellent root system that makes it an excellent choice for preventing erosion, scavenging nutrients, and building soil structure. Triticale has a heavy residue on the surface much like that of rye, thus making it a good choice for weed suppression. It produces a lot more residue			



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		than other cover crops like wheat and barley, thus making it a much more effective cover crop. Producers that plant triticale as a cover crop should be given the extra \$20 dollars per acre because of the advantages it has as a cover crop.			
9C		There should be a precision soil sampling program for either grid or zone soil sampling that would pay a percentage for the implementation of precision soil sampling. Precision soil sampling is becoming more popular and has many advantages to it. The concept of precision soil sampling is to determine which sections of the field need more fertilizer such as lime and potash. This then reduces the amount of fertilizer that needs to be spread helping the environment and the farmer's pocket.			
10C		Add a cost-share practice for electrical conductivity (EC) in PY 2024. We suggest this be available to participants as a one-time opportunity to have their land mapped using EC precision technology. Soil EC is a single measurement that can help tell a producer about multiple soil properties that affect crop productivity such as organic matter, soil texture, and subsoil characteristics. Soil EC maps can also be used to more accurately direct grid or zone precision soil sampling. A producer who has completed EC mapping on their operation is able to			

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		improve the placement of nutrients and other inputs, protecting the environment and helping their bottom line.			
11C		Consider raising the cost-share rates for SL-8M, SL-8H, NM-7, WQ-4, and any other cover crop practice to be in proportion with the SL-8B practice.			
12C		Review NM specs that reference PSNT and soil nitrate testing for consistent language. These are the same test run at different times of the year.			
13C		Review NM specs for consistency regarding sampling fees and the number of acres/fields to be covered by a single test (some say one test per field, others say 7-20 acres).			
14C	NM-5N	For NM-5N, request that a pre-plant application of "ESN: Smart Nitrogen" be eligible for the first split pre-planting of corn or cotton. Currently the NM-5N states, "All split applications will be applied at a growth stage when the plant is entering the highest demand for nitrogen. Application of any sidedress nitrogen, including the first split, must be applied after the corn is at the 5-leaf stage or at least 12" in height."  <a href="https://smartnitrogen.com/how-esn-works/">https://smartnitrogen.com/how-esn-works/</a>			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		<p>This new innovative source of nitrogen promotes efficient uptake and prevents nitrogen losses which is exactly the purpose of the NM-5N practice. By allowing a pre plant application farmers can more accurately place nitrogen in the root system and ensure that it reaches the intended crop thanks to its delayed release. This allows more flexibility for farmers to participate in the NM-5N practice and split their nitrogen applications over the full growing season.</p>			
15C		<p>Develop a BMP for application of compost on cropland. A draft BMP spec is provided as a starting point.</p>			
16C		<p>Establish a higher rate for legume cover crops, particularly vetch, either in combination or not in combination with a small grain. Vetch cover crops are providing significant biomass and nitrogen fixation to reduce nitrogen applications on subsequent crops. The reduced N application is a water quality goal. Currently, the legume crops receive a reduced cost-share rate at \$45/acre. We feel that this needs to be more in line with cost share rates for small grain cover crops.</p> <p>And/or offer additional incentive for any cover crop with significant amounts of biomass in the Spring.</p> <p>This idea would be similar to the “pay for</p>			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		<p>production” that was considered in a previous year.                      For example, the \$90/acre cover crop payment would be based upon the amount of biomass achieved in the spring and not just when it was planted in the fall. So there might be 2 planting commitment levels:</p> <ol style="list-style-type: none"> <li>1. Planting with low biomass - this would be the producers that kill cover early (March 15) or don't get much biomass when spot-checked - \$60/acre</li> <li>2. Planting with high biomass – producers would commit to a later kill date (April 15). Biomass samples could be taken - \$90/acre</li> </ol>			
17C	NM-5N	<p>Edit the NM-5N Rates section regarding hayland applications. Currently the Rates section says “more than two” but should be “two or more”, consistent with section B. Review other wording in Rates section for edits needed to be consistent with requirements for small grains and other crops.</p>			
18C	NM-6	<p>It was recently clarified that the NM-6 allows payment for multiple injections on the same field in one program year. The spec should be updated to specify that multiple injections will be paid under one instance.</p>			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
19C	WFA-NM	In the WFA-NM replace the requirement to verify implementation of the NMP (B. 1. vi.) with the NMP implementation policy found in other NM specs.			
20C		Add a practice to re-enroll or capture existing grassland that was converted from row crop (may help with WIP). <i>In 2022 the subcommittee voted to create a CCI practice for the existing SL-1 to address this suggestion, which was deferred by the full TAC.</i>			
21C		NRCS now pays for variable rate lime, nitrogen, phosphorus and potassium through their Conservation Stewardship Program "Level C". Reconsider the inclusion of variable rate lime and potash into the VACS Program. <i>Deferred in 2022</i>			
22C		Add the following to SL-15A Description and Purpose:  "To encourage utilization of this practice by producers with cotton and peanuts in their rotation, a one-time exception to maintaining 60% residue for five consecutive years will be granted to those willing to add an extra year to the lifespan of this practice". Under B.2., add, "For fields planted in peanuts, a small grain or cover crops must be planted within 30 days of digging. Cotton fields may also need to be planted in a small grain or cover crops to maintain biomass". Under B.6., add, "For			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		fields that have been rutted during harvest, small grains or cover crop must be planted within 30 days to maintain compliance with this specification. It is recommended that cover crops planted after November 1st be drilled to ensure an adequate stand". <i>Deferred in 2022</i>			
23C		Revise NM-5N B.3 to clearly distinguish/describe PSNT and tissue samples. Currently both are listed under B.3.i in a way that can be confusing.			
24C		Report out from NM-5SH STBA Pilot Project			
<b>Duplicate or Ineligible Suggestions Received:</b>					
		Add Cotton to the NM-3C standard to promote the split application of cotton through a sidedress at first square (the optimal growth stage and highest demand the crop has for nitrogen). Studies have been shown by NCSU that "cotton utilizes very little N and K from planting until first square, and peak demand for nutrients like N and K occurs during the bloom period." <b>Read more at:</b> <a href="https://cotton.ces.ncsu.edu/2016/06/the-importance-of-timely-side-dress-fertilizer-application-and-proper-petiole-sampling-collins-edmisten-crozier-hicks/">https://cotton.ces.ncsu.edu/2016/06/the-importance-of-timely-side-dress-fertilizer-application-and-proper-petiole-sampling-collins-edmisten-crozier-hicks/</a>			

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Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		<i>This suggestion was not received by the submission deadline. If time allows, the TAC may take it up after all other business for the year is complete.</i>			
		Incentivize the use of cover crop mixes in the SL-8B. We encourage producers to increase diversity on their cover crops fields to increase coverage, organic matter, grazing/forage capabilities and improve overall soil structure. Did the initial research that proved Rye scavenged more nutrients include comparisons to cover crop mixes? If not, research should be done and if conclusive, included on the specification. <i>Addressed by 1C</i>			
		Add precision soil sampling (grid or zone) as a practice available for cost-share in PY 2024. Having the results of this type of sampling available allows agricultural producers to precisely target the application of nutrients and other inputs. This leads to much less potential loss of nutrients that would degrade water quality. Grid or zone sampling creates accurate, site-specific information that results in more efficient fertilizer placement, better environmental stewardship, and more impactful yield results. It also allows producers to avoid placing high-cost inputs where they may not be needed or may exacerbate an existing problem. Adding this as a cost-shared best management			

**MATRIX OF ADVANCED COVER CROP NUTRIENT MANAGEMENT RECOMMENDATIONS FOR CALENDAR YEAR 2023 (CY23) TAC**

Item #	Ag. BMP	Suggestion to the TAC	TAC Recommendations	DCR Supports	FY2024/2025
		practice would be beneficial for our conservation goals and for producers. <i>Addressed by 9C</i>			
		<p>Currently, the SL-8B payment rate for planting triticale as a cover crop is the same as that for using wheat. We recommend changing the payment rate for using triticale to equal that for using rye or at least be recognized by a higher incentive rate than wheat. As a derivative of rye, triticale shares the characteristic of excelling in root and biomass growth after planting and before the dormant period in comparison to wheat. This improves triticale’s ability to prevent soil and nutrient loss and maintain water quality. Triticale’s increased growth continues in late winter/early spring, leading to heavier residue for weed suppression than that from wheat, which can decrease need for additional herbicide applications that can add potential pollution to surface and ground waters. Increasing the payment rate for use of triticale as a cover crop is a sound decision to give producers another choice that is more effective at preventing non-point source pollution. Triticale can not be sold as wheat so acknowledging it with an increase in rate may help move and get rid of excess. <i>Addressed by 8C</i></p>			



**MATRIX OF DEFERRED COVER CROP NUTRIENT MANAGEMENT RECOMMENDATIONS**

Item #	Ag. BMP	Suggestion to the TAC	Reason for Deferring

**MATRIX OF TABLED COVER CROP NUTRIENT MANAGEMENT RECOMMENDATIONS**

Item #	Ag. BMP	Suggestion to the TAC	Reason for Tabling

**Attachment 2**

<https://access.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/jeq2.20342>

### Attachment 3

## Virginia Association of Soil and Water Conservation Districts

### Policy on Agricultural and Urban Composting (Draft)

**Policy:** The Virginia Association of Soil and Water Conservation Districts supports the increased use of composting via aerobic thermal decomposition of organic materials to recycle organic matter, including plant material, manures, animal processing waste, and urban organic matter including food waste, and yard debris. This policy covers all land in the Commonwealth of Virginia, including large, medium, and small farms, urban and suburban neighborhoods, and city and county governments.

**ISSUE:** “Composting” is the aerobic, or oxygen-requiring, decomposition of organic materials by bacterial and fungal microorganisms under elevated thermal conditions. The scale of modern composting ranges from backyard piles to on-farm composting and to large commercial facilities that produce thousands of tons of compost annually. Compost is made from a long list of organic feedstocks that have a broad range of carbon to nitrogen (C:N) ratios. Aerobic thermal compost typically uses a mix of organic materials that are low C:N, medium C:N, and high C:N but have a weighted average C:N ratio of between 20:1x and 60:1. Oxygen levels should be greater than 6 ppm. Water content should be about 50% by weight. High thermal temperatures are generally created by bacterial and fungal reproduction and should be between 131 °F to 160 °F for several days, depending on the temperature, to kill weed seeds and human and plant pathogens. Thermal composting is also generally recommended to kill weed seeds prior to using compost for vermiculture.

In addition to bacteria and fungi, natural soils include higher level organisms including protozoa, beneficial nematodes, microarthropods, arthropods, and worms. All of these organisms make up what is called the soil food web and are necessary for nutrient cycling, plant nutrition, soil structure, and pathogen destruction. When agricultural or urban soils include a desirable level of these microorganisms, the soil can be considered biologically complete. When compost includes a desirable level of these organisms, it may be described as BioComplete™ compost.

Sand, silt, and clay constitute the mineral components of dirt, but soil organic matter and microorganisms are necessary for the dirt to become true soil. It is the bacteria and fungi that create soil structure via biofilm materials which absorb and hold water and nutrients while also filtering chemicals and other contaminants in the soil. Low amounts of soil organic matter results in poor plant growth and higher nutrient and sediment runoff; high amounts of soil organic matter correlate with improved plant growth due to nutrient cycling, improved plant health, improved water retention, lower soil runoff, and improved water quality.

Composting has been practiced for thousands of years and has been recognized as a highly beneficial best practice for restoring the quality of soil. However, agricultural composting has not been widely adopted as a best farming practice in many parts of the world, including the United States. Consequently, the amount of soil organic matter in our soil has dropped dangerously because of tillage, winds (ex. The Dust Bowl), and water runoff into our streams. With the increased use of industrial inorganic fertilizers, which are all salts, the increased amounts of nitrogen, phosphorous, potash, and

silts have, in turn, contaminated our rivers, and the Chesapeake Bay. This has adversely impacted aquatic life. The use of cover crops and no-till farming methods have helped improve soil health and the amount of soil organic matter in the soils where these practices have been employed. The addition of compost to restore soil organic matter has further improved our soil. Combining the addition of compost, cover crops, no-till practices, and similar restorative methods can significantly speed up the restoration of our soils and our waters.

Large quantities of urban land and food waste have been generally put into landfills. Organic landfill waste creates methane, alcohols, acids, and other harmful products of anaerobic decomposition. It would be significantly better to recycle urban organic waste using the aerobically decomposition processes of composting so that urban waste is recycled back into the soil in a healthy manner. Some commercial compost operations in Virginia are already using biosolids as a high nitrogen component in their aerobic composting process.

#### References:

1. The Composting Handbook, Robert Rynk, et. al., Academic Press, London, 1922.
2. Bell B, Platt B. Building Healthy Soils with Compost to Protect Watersheds. Washington, DC: Institute for Local Self-Reliance; 2014. <https://ilsr.org/wpcontent/uploads/2013/05/Compost-Builds-Healthy-Soils-ILSR-5-08-13-2.pdf>.
3. On-Farm Composting Handbook, National Regional Agricultural Engineering Services, RAES-64, 1992.
4. The Rodale Book of Composting, Rodale Press, 2018.
5. Soil microbiology: [https://en.wikipedia.org/wiki/Soil\\_microbiology](https://en.wikipedia.org/wiki/Soil_microbiology)
6. Soil food web: [https://en.wikipedia.org/wiki/Soil\\_food\\_web](https://en.wikipedia.org/wiki/Soil_food_web)
7. Application of Nematode Community Analyses-Based Models towards Identifying Sustainable Soil Health Management Outcomes: A Review of the Concepts: <https://www.mdpi.com/25718789/5/2/32>
8. Effect of soil biofilms on ecological function and impact on soil properties, in Microbes in Land Use Change Management, Elsevier Press, 2021, Pages 91-107: <https://www.sciencedirect.com/science/article/pii/B9780128244487000061#:~:text=Microbial%20biofilms%20developed%20on%20the%20soil%20are%20composed,a%20biofilm%20matrix%20and%20maintain%20the%20biofilm%20cohesiveness>
9. EPA, Types of Composting and Understanding the Process: <https://www.epa.gov/sustainablemanagement-food/types-composting-and-understanding-process>
10. ECFR, Part 205- National Organic Program: [eCFR :: 7 CFR Part 205 -- National Organic Program](https://www.ecfr.gov/current/title-7/subtitle-B/chapter-I/subchapter-M/part-205/subpartC/section-205.203)
11. EPA Composting at Home: <https://www.epa.gov/recycle/composting-home>
12. EPA, Soil fertility and crop nutrient management practice standard: <https://www.ecfr.gov/current/title-7/subtitle-B/chapter-I/subchapter-M/part-205/subpartC/section-205.203>
13. USDA/NRCS 205.203 Soil fertility and crop nutrient management practice standard.: RCS, Part 637 Environmental Engineering, National Engineering Handbook, Chapter 2 Composting: <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=28910.wba>

14. USDA Guidance, Compost and Vermicompost in Organic Crop Production:  
<https://www.ams.usda.gov/sites/default/files/media/5021.pdf>

### Environmental Benefits of Composting and Compost

<b>Economic Benefits of Composting and Compost</b>	<b>Environmental benefits of composting and compost</b>
Increase in crop yields and plant production and quality.	Improved soil health and plant vigor.
Destruction of weed seeds; reduce herbicide costs.	Retention of soil nutrients.
Reduction in waste disposal costs.	Plant disease suppression; reduction in pesticide use.
Reduction in handling costs.	Erosion control.
Revenue from processing or “gate” fees.	Decomposition of hormones, antibiotics, and pesticides.
Revenue from compost sales.	Treatment of animal mortalities.
Production of a useable product; reduced costs of substitute inputs.	Lower environmental impacts from compost versus raw feedstocks.
Generation of an animal bedding substitute.	Reduction of greenhouse gas emissions .
Expansion of outlets for organic residuals.	Increased water retention in the soils.
Reduced expenses for fertilizer, pesticides, herbicides.	Reduced water contamination by fertilizer inorganic salts and sediments.
	Improved fisheries habitat.
	Carbon sequestration

Source: Reference 1, Table 4, with some additions.