

# Minnesota Ecological Science Job Approval Authority Fact Sheet

## **Cover Crop (340)**

**DEFINITION:**

Grasses, legumes, and forbs planted for seasonal vegetative cover.



**ESJAA INFORMATION:**

Job Classes	Control Factors	
	Number of Species Planted	Practice Purpose*
Job Class I	1	Soil Erosion Wind and Water
Job Class II	2 to 3	Water Quality-Excess Soil Nutrients
Job Class III	3 to 5	Soil Health-Maintain or Increase
Job Class IV	Greater than 5	Pest Cycles and Pressure
Job Class V	All	

**CONTROL FACTORS:**

The Cover Crop (340) practice has two factors that have been used as controlling factors. Number of Species Planted is a controlling factor with Number as the units, and Practice Purpose is a controlling factor with Purpose as the units.

\*Practice Purpose will be the primary controlling factor used for JAA in MN. This is due to the fact that each purpose has its own unique set of dynamics to consider when planning cover crops and these purposes continue to increase in complexity. In contrast, the number of species does not always convey complexity, especially when dealing with 1-3 species. The number of species certainly does not correlate to the practice purpose.

**National KNOWLEDGE, SKILLS, AND ABILITIES (KSA):**

1. Knowledge of State's Crops and Cropping Systems
2. Knowledge of Soil Health and Management
3. Ability to use current Wind and Water Erosion Prediction Tools
4. Knowledge of Tillage Systems and Equipment used in the State
5. Knowledge of Adaptive Species of Cover Crops for Planned Purposes in the State
6. Knowledge of Approved Planting Dates, Times and Methods of Termination for Cover Crops.

**MINNESOTA GUIDANCE:** Conservation planner will be evaluated for each stage/phase of the conservation practice. These stages consist of Inventory and Evaluation, Practice Design and Development, and Installation and Checkout.

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## **ADDITIONAL KSAs BASED ON PRACTICE STAGE:**

### **Inventory and Evaluation**

#### JAA Levels I-III

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Understand the practice standard, Agronomy Technote 33, IR, and SOW.

Knowledge of resource concerns that can be addressed by using cover crops.

Ability to communicate cover crop benefits and how each cover crop can affect each practice purpose.

Awareness of crop rotations and the different methods how cover crops can fit into a cropping system timeline.

Awareness of tillage systems and be able to discuss ways to adapt tillage systems to fit cover crops into the management.

Basic knowledge of herbicide carryover and rotation restrictions for cover crops.

#### JAA Levels IV-V

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Knowledge of how cover crops fit into organic cropping systems and how this impacts crop rotation, tillage, and nutrient management.

Knowledge of cover crops and their use in urban and small farm operations.

Knowledge of livestock integration and grazing/haying/silage considerations.

### **Design and Development**

#### JAA Levels I-V

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Knowledge of planting dates, rates and methods and be able to discuss limiting variables.

Ability to develop a cover crop implementation plan to meet the objectives of the producer and address resource concerns with an understanding of the risks associated with different strategies.

Knowledge of Agronomy Tech Note 33 to support development of a cover crop design.

Ability to discuss termination timing and methods and the advantages or disadvantages of these methods with the producer.

Ability to develop documents (IR, seeding calculator) for a producer and clearly explain the objectives set in these planning documents.

Explain the requirements for being able to use bin run seed for use in conservation programs.

### **Installation and Checkout**

#### JAA Levels I-V

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Ability to read seed tags and calculate Pure Live Seed (PLS) to confirm cover crop seeding rate meets specifications.

Ability to complete IR and seeding calculator to certify the practice.

If bin run seed is used, ability to determine seeding rates and PLS based on the required documentation.

Ability to complete stand evaluation if needed.

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### **COMMON ASSOCIATED PRACTICES:**

Cover Crops (340) is commonly applied with practices such as Conservation Crop Rotation (328), Residue and Tillage Management, No Till (329), Residue and Tillage Management, Reduced Till (345), Nutrient Management (590), and Integrated Pest Management (595).

### **ADDITIONAL MATERIALS:**

- Clark (ed.). 2007 [Managing Cover Crops Profitably, 3rd Ed.](#) Sustainable Agriculture Network Handbook Series; bk 9
- Hargrove, W.L., ed. [Cover crops for clean water.](#) SWCS, 1991.
- Magdoff, F. and H. van Es. Cover Crops. 2000. p. 87-96 *In* [Building Soils for Better Crops.](#) 2nd ed. Sustainable Agriculture Network Handbook Series; bk 4. National Agriculture Library. Beltsville, MD
- NRCS Cover Crop Termination Guidelines:  
<https://www.rma.usda.gov/-/media/RMA/Cover-Crops/NRCS-Guidelines-version-4-June-2019.ashx?la=en>
- Revised Universal Soil Loss Equation Version 2 (RUSLE2) website:  
[https://fargo.nserl.purdue.edu/rusle2\\_dataweb/RUSLE2\\_Index.htm](https://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm)
- Wind Erosion Prediction System (WEPS) website:  
<https://data.nal.usda.gov/dataset/wind-erosion-prediction-system-weps>
- USDA, Natural Resources Conservation Service, [National Agronomy Manual](#), 4th Edition, Feb. 2011. Website: edirectives (Under Manuals and Title 190)

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