USDA United States Department of Agriculture

Minnesota Ecological Science Job Approval Authority Fact Sheet

Pasture and Hayland Planting (512)

DEFINITION:

Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay or biomass production.

ESJAA INFORMATION:

Job Classes	Control Factors	
	Forage Suitability Groups / Number of Complexity or Risk Factors	Forage species complexity
Job Class I	2 Sites / No Stated Complexity-Risk Factors	Single species
Job Class II	4 Different Sites / 1 Complexity-Risk Factor	Grass / Legume mix
Job Class III	8 Different Sites / ≤ 2 Complexity-Risk Factors	Complex introduced mixture
Job Class IV	15 Different Sites / ≤ 3 Complexity-Risk Factors	Native species
Job Class V	Unlimited Sites / Unlimited Risk Factors	Complex, diverse native species mixture

CONTROL FACTORS:

Forage Suitability Groups are: a method of grouping soils for pasture and hayland uses. The forage suitability groups are created through the analysis of soil properties that impact species selection and species performance. The soils assigned to each group are similar enough to be suited to the same species of grasses or legumes, require similar management, have similar limitations and hazards, and have similar productivity levels and responses to management (Statement from Web Soil Survey).

- The number of sites is equal to the number of Forage Suitability Groups identified on the web soil survey report (Web Soil Survey/AOI/Soil Data Explorer/Suitabilities and Limitations for Use/Land Classifications/Ecological Classification Name/Basic Options: Forage Suitability Groups. Forage Suitability Group descriptions can be found within Section II of FOTG under Soils-Statewide Official Data and County Reports).

Complexity-Risk Factors

- Slope greater than 6 percent.
- Planning a seed mix for two or more livestock species being planned.
- Seeding into an existing stand.
- Planning a seed mix for Deer species, Bison, or Horse.

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Forage species complexity:

- Job Class I: Single Species: Introduced species. One species only.
- Job Class II: Grass/legume mix: 2-4 introduced species.
- Job Class III: Complex introduced mixture: Greater than four species.
- Job Class IV: Native species: Native grasses only.
- Job Class V: Complex, diverse native species mixture: Comprised of native grasses and forbs.

KNOWLEDGE, SKILLS, AND ABILITIES (KSA):

1. Knowledge of adapted forage plants for the ecological sites/forage suitability groups in the area of service.
2. Skill in planning the planting protocols and educating land users in the operation and maintenance for the practice/operation/site.

ADDITIONAL KSAs BASED ON PRACTICE PHASES:

Inventory and Evaluation (I&E) Planning

Job Classes I-III

- Read and understand the conservation practice standard, Minnesota Agronomy Technical Note 31 (Herbaceous Vegetation Establishment Guide) information pertinent for establishing pasture and hayland plantings, implementation requirements, and the statement of work.
- Knowledge and understanding of introduced forage species.
- Knowledge of Web Soil Survey and/or Section II of FOTG to gather Forage Suitability Group information.
- Knowledge of Web Soil Survey to gather Soil Drainage Class information.
- Knowledge of Minnesota Seed Law.
- Knowledge of Minnesota Noxious Weed Law.

Job Classes IV-V

- Knowledge and understanding of using native grasses and forbs as forage.

Design and development of conservation practice requirements

Job Classes I-III

- Ability to develop seed plans using the Pasture and Hay Planting Seed Tool available in section IV of the eFOTG.
- Ability to read soil tests and develop fertilizer recommendations.
- Knowledge of site preparation methods common for geographic region.
- Knowledge of planting dates for plant species used.
- Knowledge of planting methods and equipment.
- Knowledge of plant functional groups (cool season grasses, warm season grasses, legumes, forbs).
- Knowledge of appropriate plant species (refer to the 512-Pasture and Hayland Planting section of Minnesota Agronomy Technical Note 31: Herbaceous Vegetation Establishment Guide).
- Knowledge of soil drainage classes and ability to choose species based on soil drainage classes found within the seeding area.
- Knowledge of operation and maintenance of vegetative establishment.

Job Class IV

- Skills and ability to develop seeding plans using native grasses.

Job Class V

- Skills and ability to develop seeding plans using native grasses and forbs.

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Installation oversight and certification

Job Classes I-V

- Ability to read seed tags.
- Ability to calculate pure live seed.
- Ability to ensure that the species planted meet the seeding plan and soil drainage classes present within the seeding area. Refer to 512-Pasture and Hayland Planting information in Minnesota Agronomy Technical Note 31.
- Ability to successfully complete the "Seeding Checkout" form found in the Pasture and Hay Seed Planting Tool found in section IV of the eFOTG.
- Skills in seed, seedling and plant identification of common plant and weed species.
- Ability to determine if a seeding is established based on Minnesota Agronomy Technical Note 17: Guidelines for Herbaceous Stand Evaluations.

COMMON ASSOCIATED PRACTICES:

Pasture and Hayland Planting (512) is commonly applied with practices such as Forage Harvest Management (511), Nutrient Management (590), Prescribed Grazing (528), Fence (382), Pipeline (516), Watering facility (614), Water well (642), and Herbaceous Weed Control (315).

ADDITIONAL MATERIALS:

- Pasture and Hay Planting Seed Tool, eFOTG section IV
- Forage Suitability Groups can be found on Web Soil Survey, under Soil Reports/Land Classification, or eFOTG section II.
- Minnesota Agronomy Technical Note 31 Herbaceous Vegetation Establishment Guide. Located in Section I of the eFOTG.
- Minnesota Agronomy Technical Note 17 Guidelines for Herbaceous Stand Evaluation. Located in Section I of the eFOTG.
- Minnesota Biology Technical Note 16: MN Rankings For Native Forb Tolerance to Aminopyralid (Milestone®) and Clopyralid (Transline®) Herbicides. Located in Section I of the eFOTG.