



Recommendations for No-Till Forage Seeding

No-till seeding of forage crops can be used to replace rundown pastures and hayfields or to supplement existing forage resources. Although there are advantages to no-till seeding, especially for erosion control, some advance planning is essential. Below are several factors that should be addressed *before* seeding, to determine which forage crops best suit your operation and to increase your chances for a successful seeding.

SOIL DRAINAGE: Some plants will tolerate wet soils; other plants will not. Select forages that can tolerate drainage conditions on your farm. Contact your local SCS or Cooperative Extension office to determine the soil types and drainage class of soils on your farm. See Extension fact sheet #2272, "*Selecting Forage Crops for your Farm*" to match forage crops to soil drainage.

SOIL FERTILITY: A soil test should be done before any no-till seeding, and fertilizer applications should be based on the soil test results. The soil test form describes the sampling procedure; make sure you use the right crop codes, soil type, etc. Because fertilizer and lime will usually be topdressed, you should soil test *the year before seeding*. If you are seeding in the spring, applying lime the previous fall is preferred. This is also true for phosphorus (unless you can apply P through the drill).

CONTROLLING EXISTING VEGETATION: Existing vegetation can either be killed (which means you are replacing the pasture/hayfield) or suppressed (you are adding something to it). Recommendations for herbicides to kill or suppress vegetation are available in "*1993 New England Guide to Weed Control in Corn and Forage Crops*" (contact local Extension office). If you are killing existing plants, fall applications are usually more effective. Again, planning ahead is critical. No-till seedings without herbicide are possible, but competition from existing vegetation must be managed through mowing or grazing.

INTENDED USE: Plants respond differently to harvest management, both in pastures and hayfields. You must consider your harvest management when deciding which forages to use. If harvest management is not going to change *after* the no-till seeding, the seeding may not be worthwhile. *Match forage species to harvest management!*

Check when Seeding:

- **Seeding Rate:** Use recommended rate (see back of this page), check to make sure drill delivers correct rate.
- **Seeding Depth:** Most perennial forages should be seeded 1/4 to 1/2 inch deep; when you start seeding, check placement depth and adjust if necessary.
- **Fertilizer Rate:** If you are banding fertilizer through the drill, check the delivery rate to make sure you are applying the right amount.

After Seeding:

- **Time to first Harvest:** Seeded plants will need time to establish before being harvested. For **no-till into killed vegetation**, wait for early flowering stage. For **no-till into suppressed vegetation**, you may harvest when seedlings are 1 to 2 inches tall to remove competition from other plants. If this is not possible, wait until seeded plants are well established before harvest. **In pastures**, first harvest should be later than for hayfields (because livestock will graze shorter). Grazing may be used to weaken existing vegetation soon after seeding, but careful observation and management are important.
- **Maintain Soil Fertility:** Soil test at least every two years. You can use manure, commercial fertilizer, or other nutrient sources to maintain fertility.



Because each farm operation is different, there is no single forage crop (or mixture) that fits all situations. Table 1 (below) lists some possibilities based on two important factors: *soil drainage* and *intended use*. You may have other ideas that better meet the objectives of your farm.

Table 1. Forage crops and forage mixtures¹ based on soil drainage and intended use.

	<u>Well drained</u>	<u>Moderately drained</u>	<u>Poorly drained</u>
1-2 cut hayfield or Pasture (2-3 rotations/year)	Timothy Smooth bromegrass	Timothy	Timothy
	Birdsfoot trefoil Red clover	Birdsfoot trefoil Red clover	Birdsfoot trefoil
3-4 cut hayfield ² or Pasture (Intensive rotation)	Orchardgrass Reed canarygrass	Orchardgrass Reed canarygrass	Reed canarygrass
	Alfalfa ³ Red clover	Alfalfa ³ Red clover	

- ¹ Mixtures usually contain only two forage species. Using two or more grasses together may cause problems in deciding when to harvest because of differences in maturity.
- ² Hayfields harvested 3-4 times and intensively managed pastures will require more attention to soil fertility (especially nitrogen).
- ³ Management of alfalfa in pastures is difficult and stands can be short-lived. Ladino clover may be substituted for alfalfa.

Table 2. Suggested seeding rates for forage seeded alone or in mixtures.

<u>Forage Crop</u>	<u>----- Into killed sod -4-----</u>		<u>Into suppressed or live sod</u>
	<u>Seeded alone</u>	<u>In mixture</u>	
Orchardgrass	10	2-4	5-6
Reed canarygrass	8-10	5	not recommended
Smooth bromegrass	15	4-6	6-8
Timothy	8-10	4-6	6-8
Alfalfa	15	8-10	10
Birdsfoot trefoil	6-8	6	8
Red clover	10	5	6-8
Ladino clover	not recomm.	2-4	4-6

Other sources of information (available at local Extension office):

- "Growing Forage Legumes in Maine" Extension fact sheet #2261
- "Growing Forage Grasses in Maine" Extension fact sheet #2262
- "Selecting Forage Crops for Your Farm" Extension fact sheet #2272
- "1993 New England Guide to Weed Control in Corn and Forage Crops:

Tim Griffin
Extension Sustainable Ag. Specialist

Chris Jones
Conservation Agronomist (USDA-SCS)