

SELECTED GREEN MANURES AND COVER CROPS FOR MAINE

RED CLOVER (*Trifolium pratense*)

Type:	Legume, short-lived perennial (biennial)
Hardiness:	Winterhardy
Seeding rate:	8-12 lb/A (about ¼ lb/1000 sq. ft.)- ½ in. depth
Soil Requirement:	Relatively tolerant to low pH (as low as 5.0); Prefers pH greater than 6.0 and good fertility
Root System:	Good, deep root system with taproot Most roots in upper 12 inches
Comments:	Shade tolerant, good in interseedings. Slow early growth, does poorly in hot dry weather. Can be frost-seeded or over-seeded (corn 6-10").

CRIMSON CLOVER (*Trifolium incarnatum*)

Type:	Legume, spring annual (Northern New England)
Hardiness:	Not hardy in Northern New England
Seeding rate:	20-30 lb/A (1/2 - ¾ lb/1000 sq. ft.)-1/2 in. depth
Soil Requirement:	Relatively tolerant to low pH (as low as 5.0); Prefers pH greater than 6.0 and good fertility
Root System:	Good root system. Most roots in upper 12 inches
Comments:	Poor performance in interseedings with grain Good early growing legume, better weed competition than red clovers. Attractive flowers.

BERSEEM CLOVER (*Trifolium alexandrinum*)

Type:	Legume, spring annual (Northern New England)
Hardiness:	Not hardy in Northern New England
Seeding rate:	15-20 lb/A (1/3-1/2 lb/1000 sq. ft.)-1/2 in. depth
Soil Requirement:	Prefers pH greater than 6.0 and good fertility
Root System:	Good root system
Comments:	Good performance in interseedings with grain. Fair early growth, better weed competition than red clovers. Responds well to mowing or grazing.

HAIRY VETCH (*Vicia villosa*)

Type:	Legume, vigorous vines
Hardiness:	Variable in Northern New England
Seeding rate:	50-60 lb/A (1-1 ½ lb/1000 sq. ft.) - 1 in. depth
Soil Requirement:	Wide range of soil conditions
Root System:	Fair root system, 1 to 3 feet deep
Comments:	Often seeded with rye (56 lb/A) for support (reduce vetch rate to 30 to 40 lb/A). Slow early growth. Strong nitrogen fixer once established. Sensitive to frost heaving.

FIELD PEA-VETCH-OATS (*Pisum sativum*-*Vicia villosa*-*Avena sativa*) (PVO)

Type:	Legume/small grain mix
Hardiness:	Not winterhardy
Seeding rate:	150-30-50 lb (P-V-O)/A (3.5-0.75-1.0 lb/1000 sq ft.)
Soil Requirement:	Tolerant of a wide range of soil conditions
Root System:	Combination of fibrous and deep root systems
Comments:	Excellent smother crop. Spring or summer seeding. Produces lush, heavy growth. Can be difficult to incorporate. Field pea not available locally and quite expensive.

BUCKWHEAT (*Fagopyrum esculentum*)

Type:	Non-Legume, summer annual
Hardiness:	Frost sensitive
Seeding rate:	50-60 lb/A (1-2 lb/1000 sq.ft.) - 1 in. depth
Soil Requirement:	Tolerant of wide range of soil conditions. Low soil fertility requirement.
Root System:	Taproot
Comments:	Good early growth, good smother crop. Breaks down quickly in soil, easily tilled. Can be double-cropped. Good phosphorus scavenger, first crop on new land. Mow before plant goes to seed (potential weed).

ANNUAL RYEGRASS (*Lolium multiflorum*)

Type: Non-Legume, cool-season grass
Hardiness: Winter hardy in mild climates
Seeding rate: 25-35 lb/A (1/2-1 lb/1000 sq. ft.) - ½ in. depth
Soil Requirement: Tolerant of wide range of soil conditions.
Prefers pH 5.5 to 7.0 with good drainage.
Root System: Fibrous root system
Comments: Can be grazed, good temporary pasture.
Tolerant of intercrops.
Can be overseeded into corn at above rate.

SPRING OATS (*Avena sativa*)

Type: Non-Legume, small grain
Hardiness: Frost tolerant, but not winterhardy
Seeding rate: 96 lb/A (2.5 lb/1000 sq. ft.) - 1 in. depth
Soil Requirement: Tolerant of wide range of soil conditions.
Does well pH 5.0 to 7.0.
Root System: Fibrous root system
Comments: Grain crop that can be grazed.
Good nurse crop for legumes.
Excellent fall cover if seeded to allow 30 to 40 days
growth (6-12"), will form dead mulch in spring.
Good smother crop or green manure.
Barley is similar, but needs pH > 5.5

WINTER RYE (*Secale cereale*)

Type:	Non-Legume, small grain
Hardiness:	Winterhardy (avoid poorly drained sites)
Seeding rate:	90 lb/A (2 lb/1000 sq. ft.) - 1 in. depth
Soil Requirement:	Tolerant of wide range of soil conditions. Does well pH 5.0 to 7.0.
Root System:	Fibrous root system
Comments:	Grain crop that can be grazed. Can be seeded into late September. Good nurse crop for legumes (frost seedings). Excellent fall cover, will have to be killed (tillage, herbicides, or mowing) if different crop. desired next spring. Good smother crop, can be "allelopathic". Winter wheat is similar, but is less hardy, needs pH > 5.5 and slightly earlier seeding.

SORGHUM/SUDANGRASS (*Sorghum bicolor x sudanensis*)

Type:	Non-Legume, warm-season grass
Hardiness:	Not hardy
Seeding rate:	30-40 lb/A (1 lb/1000 sq. ft.) - 1 in. depth
Soil Requirement:	Tolerant of wide range of soil conditions. Does well pH 5.0 to 7.0.
Root System:	Fibrous root system
Comments:	Good summer smother crop, 6 to 8 feet tall. Produces lush, heavy growth when adequate nitrogen is available. Can be used for late pasture, but not early due to prussic acid. Can be difficult to incorporate.