

FERTILIZING, LIME, AND SEEDING RECOMMENDATIONS
FOR RESTORATION OF CONSTRUCTION PROJECTS
ON FARMLAND IN NEW YORK STATE

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FERTILIZER, LIME AND SEEDING RECOMMENDATIONS FOR RESTORATION OF CONSTRUCTION PROJECTS ON FARMLAND IN NEW YORK

This paper supplements the Department of Agriculture and Markets' various guidance documents for construction projects that impact farmland. The fertilizer, lime and seeding information in this paper can be used for construction projects such as wind energy, natural gas transmission pipelines and electric transmission lines.

A. Fertilizer for Reseeding of Disturbed Areas

The fertilizer rates listed below are approximations. Prior to construction, before the topsoil is stripped, representative soil samples should be obtained from the areas to be disturbed. The soil sampling should be consistent with Cornell University soil testing guidelines and samples should be submitted to a laboratory for testing of pH, % organic material, cation exchange capacity, Phosphorus/Phosphate (P), and Potassium/Potash (K). The results are used to determine the lime and fertilizer rate to apply for the respective soils and farms.

1. Establishment of legumes or legume and grass seed mixes - if soil test results are not available, apply 300 lbs. per acre of 10-20-20 (10 lbs. of nitrogen, 20 lbs. of phosphorus, and 20 lbs. of potassium per 100 lbs. of fertilizer) or 600 lbs. per acre of 5-10-10.
2. Establishment of grass hayland and grass pasture - if soil test results are not available, apply 400 lbs. per acre of 10-10-10.

B. Fertilizer for Temporary Seeding of Exposed Subsoil Construction Work Surface

Fertilizer is not recommended for temporary seed cover on the topsoil stockpile, but is strongly advised on the exposed subsoil surface. The surface of the exposed subsoil should be fertilized with 200 lbs. per acre of 10-20-20 prior to temporary seeding.

C. Agricultural Lime

Apply a minimum rate of 3 tons agricultural lime per acre for most permanent seedings in naturally low-lime soils (Southern Tier/northern Allegheny Plateau). A heavier amount will be applied if so indicated from pH test results. Use lower lime rate on naturally high-lime soils based on site specific soil pH test and farm record of recent lime application (Central Plains/northern half of Finger Lakes Region).

Application rates for pelletized and agriculture lime are the same in tons per acre; however, pelletized lime is easier to handle and reacts to the soil quicker (do not use "liquid lime" on agricultural land).

D. Temporary Cover

1. Large construction projects that will likely result in one year of construction and one year of restoration.
 - a. Topsoil stockpile – topsoil that is stripped and stockpiled in late spring to mid-summer should be seeded with either Oats (96 lbs. per acre) or Aroostook Winter Rye (100 lbs. per acre). A light to moderate application (1500 - 2000 lbs. per acre) of weed-free straw or hay mulch may be necessary to retain soil moisture. For large stockpiles, it may be necessary to grade the surface of the stockpile using small, light-weight equipment, to achieve a uniform seed application. Grading of the topsoil stockpile should be done on a limited basis and should be minimized to prevent compaction.
 - b. Exposed construction surface (subsoil) – if seeding before the end of October, apply Aroostook Winter Rye at the rate of 150 lbs. per acre if a broadcast seeder is used or 100 lbs. per acre if a drill seeder is used. The surface of the exposed subsoil should be scarified, generally parallel to the slope's contours if possible, and fertilized prior to temporary seeding. Apply weed-free straw or hay mulch at a rate of approximately 1000 lbs. per acre after seeding.
 - c. Winterization – when construction activity is being suspended and the area is being stabilized for the winter with temporary seeding being applied between the middle of September and late October, any topsoil stockpiles and exposed work surfaces (subsoil) should be seeded with Aroostook Winter Rye at the rate of 150 lbs. per acre if using a broadcast seeder or 100 lbs. per acre if using a drill seeder.

E. Permanent Seeding Mixtures¹

The following seeding rates are slightly higher than the standard seeding rates to compensate for less than favorable conditions such as lower nutrient availability in the soil, due to disturbance of the topsoil and subsoil, and unfavorable timing of seed application. A favorable seedbed must be prepared to improve soil to seed contact. The seedbed should be firm but not compacted and should not be too wet (soil should not stick to seeder or tractor tires). Fresh inoculants must be mixed with all legumes (alfalfa, birdsfoot trefoil, and clover) at the time of planting.

¹ All seeding rates are based on the use of a drill seeder, which is the preferred method. If a broadcast seeder is used, all seeding rates must be doubled.

1. Common hayland plantings

- a. Alfalfa – 20 lbs. per acre. If timothy, orchardgrass or brome grass are being added to the alfalfa, they should be added at the rate of 8 lbs. per acre.
- b. Pardee birdsfoot trefoil – 16 lbs. per acre and either: timothy, orchardgrass, or brome grass at the rate of 6 lbs. per acre.
- c. Red clover - 15 lbs. per acre and either: timothy, orchardgrass, or brome grass should be added at the rate of 6 lbs. per acre.

2. Common pasture plantings

- a. Ladino white clover – 3 lbs. per acre and either: timothy (6 lbs. per acre), orchardgrass (8 lbs. per acre), or brome grass (10 lbs. per acre).

Reed canarygrass can be seeded in wetter areas used for hay and pasture (with landowner approval) at a rate of 18 lbs. per acre. Do not seed reed canarygrass in wetlands.

Annual ryegrass can be added to seed mixtures above to provide quick erosion control while the other plants are becoming adequately established. Annual ryegrass should be seeded at the rate of 6-7 lbs. per acre if a drill seeder is used and 12-14 lbs. per acre if a broadcast seeder is used.

F. Monitoring and Follow-up

Restored construction areas must be monitored for no less than two full growing seasons after initial permanent seeding is completed. Surface soil moisture conditions may not be favorable at the time of seeding and during the early growth stage. As a result, seedings may be unsatisfactory due to low plant population, poor plant vigor, and overpopulation of weeds. Seedings are satisfactory if the plant density and plant vigor are equal to or better than adjacent undisturbed areas and weed population is less than the adjacent undisturbed areas. If an overpopulation of weeds exists, control measures should be implemented to minimize weed competition.

If it is necessary to topdress hayland and pasture with fertilizer to improve the plant stand, it is best to have the soil tested to determine the appropriate fertilizer application rate. If soil test information is not available, apply a minimum of 50 lbs. of nitrogen, 10-30 lbs. of phosphorus, and 50 lbs. of potassium per acre.

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