

2.4 SEEDING AND FERTILIZING



Figure 2.8. Seeding and fertilizing (Source: Iowa DOT)



Figure 2.9. Grain drill seeding (Source: Department of Civil, Construction, and Environmental Engineering, Iowa State University)

Overview

Description: Establishment of grasses and or legumes on disturbed areas. Note: A ground cover of grass is the most effective method for controlling erosion.

Problem identification: To reduce erosion and sedimentation. Bare areas of soil exposed to the elements contribute sedimentation and dust.

Design purpose: To reduce erosion and damage to downstream resources and improve the soil for permanent plantings.

Associated practices: Applies to all disturbed areas devoid of vegetation, unless a specific reason causes vegetation to be inappropriate, such as in protecting slopes, waterways, etc.

Installation: Effective reduction in erosion can be achieved by either temporary or permanent seeding. Temporary seeding is short-lived and will lose its effectiveness in six to nine months. The procedure for temporary seeding will be addressed first.

When it becomes evident that a disturbed area in a construction site will not be disturbed for 21 days, it shall be seeded before day 14. However, if excavated material is present, the disturbed area should be seeded or surrounded by a silt fence.

Temporary Seeding

1. Prepare seedbed to a depth of three in. Before final preparation, apply 400 lbs of 13-13-13 fertilizer per acre (10 lbs per 1,000 sq ft) and incorporate it into the seedbed.
2. Roll the area to be seeded with an approved cultipacker.
3. Apply seed with an approved seeder.
4. Roll the seeded area. If the seeded area is relatively flat, the seeding operation is completed.
5. Mulching will be beneficial if the seeded area is steeper than a 3:1 slope or faces south or southwest. The rate of application is 1.5 tons per acre (70 lbs per 1,000 sq ft).
6. Till the mulched area with a mulching tiller.

If a hydroseeder is used to apply hydromulching, it must be applied at the rate of 2,000 lbs per acre and as the final operation. It is not permitted to apply seed and fertilizer with the mulching.

There are several types of temporary seeding:

- Perennial ryegrass, 40 lbs per acre (1 lb per 1,000 sq ft)
- Oats, 48 lbs per acre (1.2 lbs per 1,000 sq ft). Plant March 1 to May 20.
- Sudangrass, 35 lbs per acre (0.8 lb per 1,000 sq ft). Plant May 21 to August 14.
- Winter rye, 64 lbs per acre (1.6 lbs per 100 sq ft). Plant August 15 to September 30.

Permanent Seeding

1. Prepare seedbed to a depth of 3 in. Before final preparation, apply 700 lbs of 13-13-13 fertilizer per acre (12 lbs per 1,000 sq ft).
2. Roll seedbed with an approved cultipacker.
3. Apply seed with an approved seeder.
4. Roll seedbed.
5. Apply mulching uniformly at rate of 1.5 tons per acre (70 lbs per 1,000 sq ft).
6. Till all areas mulched on the contour with a mulching tiller.

There are several types of permanent seeding:

- Lawn grass mixture, 80 lbs per acre (2 lbs per 1,000 sq ft): bluegrass 60%, perennial ryegrass 20%, creeping red fescue 15%, and white dutch clover > 5%.
- Tall grass mixture, 40 lbs per acre, (1 lb per 1,000 sq ft): Ky 31 fescue 50%, switchgrass 10%, orchardgrass 20%, brome grass 15%, and alsike clover 5%.

Maintenance/inspection: Inspect once a month and note the stand of grass; look for areas where runoff water may have caused rills to form or where lack of moisture may have caused seedlings to die. All areas showing stress should be corrected. It may be necessary to reprepare the seedbed, reseed, and remulch.

Design life: Temporary seeding varies by season; permanent seeding is permanent.

Estimated costs: Temporary seeding: \$233 per acre.
Mulching: \$350 per acre.
Permanent seed, fertilizer, and mulching: \$945.00 per acre.