Late Summer (Fall) Seeding of Forages in Iowa

Soil Testing and Fertilization

A major key to successful forage production is a good soil testing and fertilization (if needed) program. A good time to apply needed amendments to the soil is prior to seeding establishment.

If the soil analysis indicates a need for liming materials, apply agricultural lime in amounts called for by the soil test. If the soil will be tilled prior to seeding, till the lime into the soil. If the seeding must be established no-till and the test calls for large quantities of lime (four or five tons per acre or more), care must be taken to not create a very high pH zone at the surface with a low pH zone just below; it might be best to apply the lime in equal annual amounts over a period of three or four years.

Phosphorus and potassium are the two most critical fertilizer materials for establishing and maintaining a legume stand. An initial application may be tilled into the soil prior to planting. Fertilizer must be top dressed in succeeding years. Use the soil test as a guide for application rates. Band application of a starter fertilizer at seeding time may help ensure stands on soils testing low or very low in phosphorus.

When to Seed

Although the most common time of seeding establishment is in the spring, late summer seedings can be very successful. Late summer seedings should have at least six weeks from emergence until the first hard freeze. In Iowa, it is recommended that late summer seedings be completed by August 10 in the northern 1/3 of the state, by August 20 in the middle 1/3, and by September 1 in the southern 1/3. Forage species that establish too slowly to consider for late summer seeding include crown vetch and warm-season species. Those species that require a somewhat earlier establishment time than suggested above, due to slow establishment, include reed canarygrass, birdsfoot trefoil, and possibly smooth bromegrass, depending on seeding technique.

Soil moisture is often limited during late summer, and seeding should be delayed until after adequate moisture is present. Alfalfa seeded into dry soil sometimes germinates after a light shower of rain but then dies during an extended dry period. If soil moisture for germination and establishment is not present and timely fall rainfall is not likely, then it may be best to wait and seed in the following early spring.

Seedbed Preparation

Preparing a firm seedbed for planting is essential. This can be accomplished by firming the soil with a corrugated roller or cultipacker before seeding. After seeding, firm the soil again to cover the seed and obtain necessary seed-soil contact. Final seed placement should be no deeper than 1/2 inch in heavy soils and 3/4 inch in light soils.
Companion (Cover) Crops

A cereal grain companion crop is not recommended for late summer seedings as it would offer too much competition for soil moisture. Normal lower rainfall amounts in the fall reduce the erosion potential immediately after seeding. In addition, the companion crop's value in weed management is diminished at this time of year. However, on highly erodible land, a companion crop at a reduced rate, such as 1/2 bushel of oats, may be beneficial for establishing a seeding.

Weed Management

Chemical weed control is usually not required for late summer seedings due to less weed emergence and competition. Annual weeds will be killed by frost. Occasionally, late-season foxtail flushes can be thick enough to offer too much competition for the new seeding and need to be control with either Poast Plus or Pursuit. If winter annual weeds or perennial weeds pose a serious problem, mechanical or chemical treatment should be considered before seeding.

Stand Enhancement

If stands established in the spring are inadequate, they may be reseeded or interseeded the following late summer. For alfalfa, stand counts per square foot should be +25 for a good stand, 15-25 for a marginal stand, and less than 15 for a poor stand in the establishment year.

Poor stands should probably be reseeded or interseeded. The difficult decision comes with a stand of 10-15 plants per square foot, where, if the plants remain healthy, additional seeding and fertility operations under less than ideal conditions may damage the stand, ultimately doing more harm than good. Under those circumstances, producers should consider weather and soil conditions especially carefully.

Re seeding marginal stands largely depends on the producer's immediate need for forage and the resulting management of the stand going into fall and winter. A reseeded or interseeded area would not be harvested after the seeding, to allow for storage of carbohydrates in the roots for survival during winter dormancy and for insulation, to improve the chances for good stand survival through the winter.

Interseeding a poor stand of newly established alfalfa plants will likely be more successful than attempting to thicken an old, established alfalfa stand. In either case, however, the alfalfa stand achieved will probably not be uniformly thick.

Seeding Rates

Suggested rates, in pounds per acre, for late summer seeding are:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Seeded Alone</th>
<th>Seeded in Mixture</th>
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<tbody>
<tr>
<td>Alfalfa</td>
<td>12-15</td>
<td>8-12</td>
</tr>
<tr>
<td>Red Clover</td>
<td>10-12</td>
<td>6-8</td>
</tr>
<tr>
<td>Smooth Brome</td>
<td>15-20</td>
<td>6-8</td>
</tr>
<tr>
<td>Orchardgrass</td>
<td>8</td>
<td>3-5</td>
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The information contained herein is a compilation and summary of information from NCR 113, Alfalfa, A Guide to Production and Integrated Pest Management in the Midwest, pp. 19-21, and from information provided by Dr. Stephen Barnhart, ISU Extension Agronomist - Pasture and Forage; Dr. Jim Fawcett, ISU Extension Field Specialist / Crops; and Mr. Brian Lang, ISU Extension Field Specialist / Crops.

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