Use pre-germinated divot mix for field repair

BY MIKE ANDRESEN, CSFM, AND DR. DAVE MINNER

Most cool-season grasses can be pre-germinated to speed establishment and recovery on athletic fields. Perennial ryegrass, Kentucky bluegrass, and tall fescue have been pregerminated and used in a divot mix to hasten seedling establishment. The Iowa State University turf management team uses the following program to manage the sand-based fields at Jack Trice Stadium and Johnny Majors practice facility:

Begin the pregermination process 4 or 5 days before the time you will actually apply seed to the field.

Submerge seed for 12 hours. Put a 50-pound bag of seed into a large watertight container. We keep four 50-gallon plastic trashcans on hand and mark them “for pregermination only.” Woven plastic seed bags that seed typically are packaged in are perfect for pregermination because the water soaks through the bag and the seed remains contained during the draining cycle. Fill the container with water so that

Athletic field seeding schedule

Cool season grasses adapted to the northern half of the United States are typically seeded from 15 August through 15 October. Late summer temperatures are still warm enough to quickly germinate seed and the ensuing cool and moist autumn will promote dense growth by tilling. Many sporting activities unfortunately conflict with this ideal time for grass establishment. The following seeding scenarios are presented to establish or reestablish grass amidst a continuous field use schedule. The strategy is to seed often and at higher than normal seeding rates in an attempt to overcome the complete removal of grass cover and exposure of bare soil. For a download, see http://turfgrass.hort.iastate.edu/extension/seed.pdf

Field Use Scenario | New construction bare soil | Fall Football | Game Field Multiple Use | Football Practice Field
---|---|---|---|---
Field Use Scenario | March | April | May | June | July | Aug | Sept | Oct | Nov
New construction bare soil | | | | | | | | | |
Fall Football | | | | | | | | | |
Game Field Multiple Use | | | | | | | | | |
Football Practice Field | | | | | | | | | |

Field Use Scenario:
- New construction bare soil:
- Fall Football:
- Game Field Multiple Use:
- Football Practice Field:

Monthly Activity and Seeding Schedule for Intense Traffic Areas:

<table>
<thead>
<tr>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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<tbody>
<tr>
<td>*</td>
<td>D.B KB</td>
<td>D.B KB+PR</td>
<td>*</td>
<td>C.B,PD Weekly KB</td>
<td>C.B,PD Weekly KB</td>
<td>C.B,PD Final seeding KB+PR</td>
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<td></td>
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<tr>
<td>D.B KB</td>
<td>*</td>
<td>C.B,PD Weekly KB</td>
<td>C.B,PD Weekly KB</td>
<td>*</td>
<td>C.B,PD Weekly KB+PR</td>
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<td></td>
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<tr>
<td>C.B,D KB</td>
<td>C.B,D,P KB Weekly KB</td>
<td>D,D,P KB Weekly KB</td>
<td>*</td>
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<td>D,D,P KB Weekly KB</td>
<td>D,D,P KB Weekly KB</td>
<td>C.B,D,P KB+PR</td>
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</tr>
<tr>
<td>C.B,D PR</td>
<td>C.D PR</td>
<td>D,D,P KB+PR</td>
<td>*</td>
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<tr>
<td>C.D PR</td>
<td>C.P PR</td>
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</tbody>
</table>

* Field being used PD, Pregemined Divot Mix; TF, Tall Fescue; D, Drill seed; Dor, Dormant seeding; BR, Bermuda grass; B, Broadcast seed; KB, Kentucky bluegrass; C, Cleat-in-seed; PR, Perennial ryegrass

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Seed count per square inch and seed weight per 1000 square feet for various divot mix depths

<table>
<thead>
<tr>
<th>Divot mix depth (inches)</th>
<th>Lbs seed/1000sqft</th>
<th>Seeds/sq.in.</th>
<th>Perennial Ryegrass</th>
<th>Kentucky bluegrass</th>
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</thead>
<tbody>
<tr>
<td>1/16</td>
<td>15</td>
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Indicates amount of seed that forms a seedling for each species.
(continued from page 10) seem very high compared to the normal broadcast seeding rates for grass establishment on bare ground. With divot mix it is important to remember that seed is mixed throughout a volume of sand and then the mixture is placed at various depths into divots. Seed visible on the surface dries out and seldom establishes while seed below a certain depth (1/4-inch for perennial rye and tall fescue, and 1/8-inch for Kentucky bluegrass) is shaded and does not continue to develop.

For each home game we mix about eight 5-gallon buckets of sand with 15 pounds of perennial ryegrass or 10 pounds of Kentucky bluegrass seed. After filling divots we feel that we are getting about 100 seedlings/square inch. At this rate the divots fill quickly without a negative effect from seedling over crowding. Some seedlings get trampled and die but those that survive create biomass and a mature turf for the beginning of next year as opposed to bare spots with exposed and compacted soil.

We start the season in September using Kentucky bluegrass since it establishes well during September but may not fill divots when seeded in October. After the beginning of October we switch to perennial ryegrass because it establishes until the end of October and even into early November. Pregerminated Kentucky bluegrass divot mix seeded in early September will have nearly 90% of the divot covered with “green fuzz” in 7 days. Perennial ryegrass fills the divots about twice as fast as the Kentucky bluegrass. Pregeneration fills the divots twice as fast as seeding without pregermination. One advantage of the pregerminated divot mix over non-germinated seed is that the pregerminated seed does not require excessive water to get the seeds started. They are already growing and it only takes a little more frequent watering to make the seedlings develop.

For downloads, see http://turfgrass.hort.iastate.edu/extension/preseed.pdf.

Mike Andresen, CSFM, is athletic turf manager for Iowa State, and Dr. Minner is a professor and extension turfgrass specialist in Ames.