

ATHLETIC FIELD MAINTENANCE

Tall Fescue/Kentucky Bluegrass/Perennial Ryegrass (Program for summer/fall play)

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FEBRUARY - MARCH

1. **Test Soil** - Collect a random soil sample and take to your County Extension Office for analysis. The recommended lime, phosphate and potash can be applied anytime, but most often it is convenient to apply these as a complete fertilizer when nitrogen is scheduled to be applied.
2. **Fill Low Spots** - Surface drainage can be improved by adding good topsoil or sand to low spots that collect water.
3. **Seed/Renovate** - Especially between the hashmarks and in the bench areas where the turf is usually worn thin (non-existent), some reseeding is needed every year. In areas outside the hashmarks where the turf is dense, there is no value in adding additional seed.
4. **Add N** - If the turf is thin and needs renovation, apply 100 lbs per acre of urea (46-0-0) or 140 lbs per acre of ammonium nitrate (34-0-0). If the area outside the hashmarks have good turf, eliminate the nitrogen in those areas since it will cause a flush of top growth that makes mowing difficult. To get maximum establishment of the new seed, wait to apply the nitrogen until the newly seeded grass has germinated.
 - (A) Consider the following grass selection criteria. See www.uky.edu/ag/ukturf for a current list of improved varieties for the following species:

Perennial Ryegrass - easiest and quickest grass to establish, has excellent traffic tolerance, will clump if annual reseeding is not accomplished in heavily worn areas, needs summer irrigation during drought periods, has serious summer brown patch disease problem if too much nitrogen is used in spring and summer.

Tall Fescue - somewhat slower to establish and less wear tolerant than perennial ryegrass, will also clump under heavy traffic if annual reseeding is not accomplished, needs less irrigation than perennial ryegrass, and also has a brown patch disease problem during summer. Sod of improved varieties is readily available, however tall fescue grown with netting should never be used in high traffic areas.

Kentucky Bluegrass - Will not withstand heavy traffic, has excellent resiliency, is very slow to establish, is excellent on baseball infield where traffic is minimum. Sod of improved varieties is readily available.

- (B) For establishment from seed, good soil-seed contact is necessary. Just broadcasting seed over a bare soil surface is almost never successful. Establishment is also improved by core aeration prior to seeding.

Method #1 - Slit seeders are specifically designed to incorporate the seed and smooth the soil surface. These machines open a slit in the soil and place the seed at the desired planting depth. Slit seeders require less total seed and the young seedlings appear to be protected somewhat by their location within the shallow depressions made by the machine. The seeder should be calibrated to seed approximately 40 lbs/Acre (1 lb/1000 sq ft) of either tall fescue or perennial ryegrass, and the area to be renovated should be traversed twice in different direction (total of 80# seed/Acre). If the area to be seeded has little surviving grass, you can broadcast about 60 to 100# seed/Acre just prior to slit seeding.

Several brands of pasture renovators are readily available within Kentucky. Since these usually make the slits (rows) much wider apart than the turf seeders, the turf area to be renovated must be traversed three or four times in different directions. Calibrate to apply 20 to 40 lbs seed per acre if traversing the turf three or four times. Just before using these pasture renovators, broadcast approximately 60 to 100 lbs of seed per acre.

Method #2 - Traverse field 4 to 7 times with a coring machine, using 3/4" tines that remove soil cores. The surface can also be disturbed/grooved with a vertical mower (dethatcher).

Next, broadcast perennial ryegrass or tall fescue seed at the rate of 225 lbs/Acre (5 lbs/1000 sq ft). Incorporate the seed with a chain drag, or section of chain-link fence.

Method #3 - For very small areas and after aeration, broadcast the seed as suggested in Method #2. Then topdress the entire area with 1/8 to 1/4 inch of good topsoil or sand. This also helps to smooth the playing surface.

- (C) If rainfall is insufficient to keep the soil moist, the establishment rate can be greatly increased with light and frequent irrigations until germination is complete.
- (D) Seed only the areas that have been worn extensively. Usually the areas outside the hashmarks on football fields do not need annual reseeding.
5. **Mowing** - Begin mowing when the new seedlings and/or established turf reaches a height of two to three inches. As a rule-of-thumb, the turf should be mowed weekly at the height of 1 ½ to 2 inches. Mowing at a 2-3 inch height may increase the grass toughness and decrease weed encroachment, but it becomes difficult to lower the height for late summer play without reducing the grass density. Never allow the turf to grow 4 to 5 inches tall between mowings. For fields that are predominantly perennial ryegrass, an even lower mowing height of 1 to 1 ½ inches will increase quality and may decrease disease incidence.

6. **Coring/Aerification** - Since coring helps alleviate compaction, the entire field should be cored several times per year. For each coring, traverse the field 3 to 4 times using 3/4 inch tines that remove soil cores. If these plugs are a physical nuisance or are unsightly, allow the plugs to dry and then pulverize them with a chain drag or steel mat. Coring is best accomplished in early spring just prior to adding additional seed, again in early summer and immediately after fall play ends.

MID - APRIL

Herbicides - After the newly planted grass seed has established sufficiently to be mowed at least once, consider applying the following herbicides:

- (A) Broadleaf weed herbicides such as Trimec, Three Way or 2,4-D (1#/A) plus dicamba (1/4#/A). These are used for control of knotweed, clover, dandelion, plantain, etc.
- (B) Granular application of Ronstar, Barricade Pendimethalin, Dimension, or Team, or a sprayable application of Dimension, Pendimethalin, or Barricade. These are pre-emergence herbicides for the control of crabgrass. If goosegrass is a serious problem, choose Ronstar. Since the newly planted grass seed usually needs additional nitrogen, it is usually more convenient to use a granular application of the herbicide and fertilizer combined.

LATE MAY

Add N - If growth appears slow, and grass is yellowish green, apply 80 lbs of urea/Acre or 100 lbs of ammonium nitrate/Acre. Irrigate immediately after application to alleviate potential burn. The use of a slow-release turf fertilizer will minimize the burn problem, even without irrigation.

JUNE - EARLY JULY

If crabgrass or goosegrass becomes competitive, carefully apply one of the following post-emergence herbicides prior to the crabgrass and/or goosegrass becoming very large:

- (A) MSMA (2 lb ai/A). In order to get complete weed kill, a repeat treatment will be necessary 7 to 10 days following the initial application. Do not spray when temperatures are above 85°F or when the turf is suffering from drought. Some turf discoloration can be expected. Do not apply more than the labeled rate and avoid overlapping, which would cause a doubling of the rate and severe discoloration of the turf.
- (B) Acclaim (0.25 lbs ai/A). This herbicide is much more expensive than MSMA but only one application is usually needed and the turf is seldom discolored. Very mature crabgrass and goosegrass will not be controlled.

JUNE - AUGUST

1. **Water** - Irrigate during extended drought periods. Do not make frequent, light irrigations that will stimulate weeds and weaken the turf. Instead, apply enough water to moisten the soil 3 to 4 inches in depth. Only during extreme droughts will weekly or biweekly irrigations be required.
2. **Disease Control** - During hot, muggy weather, continuously observe playing field for brown patch disease. If disease is severe, spray with a fungicide (See [PPA-1](#)). Most brown patch kill can be avoided by minimizing spring and summer nitrogen applications, keeping the turf mowed at 1 ½ to 2" height and avoiding late afternoon or night irrigation.
3. **Core** - Traverse field 2 to 3 times with coring machine equipped with ¾" tines that remove soil cores. Pulverize plugs with chain drag as suggested above for February-March, #6.

SEPTEMBER - OCTOBER

1. **Add N** - Apply 100#/Acre of urea or 140#/Acre of ammonium nitrate in September and again in October or November.
2. **Spot Seed** - In areas receiving most wear it is usually feasible to broadcast seed over the surface and then allow the cleat traffic to incorporate the seed. This is most successful if done just before a game and if the field is not being used during germination.
3. **Grub Control** - Watch for white grub damage. If brown spots appear, pull back sod and check for grubs. If present, apply Dylox or Mach II and water insecticide into the surface immediately. Seldom will grub problems appear on perennial ryegrass or tall fescue turf.

NOVEMBER - DECEMBER

1. **Add N** - At end of playing season apply 150#/A of urea or 200 lbs of ammonium nitrate per acre.
2. **Core** - Traverse field 2 - 4 times with ¾" tines that remove soil.

NOTES

1. **Football Field Area**
 360' x 160' actual playing surface = 1.3 Acres
 360' x 200' (including bench area) = 1.6 Acres
 300' x 54' hashmark area = 0.37 Acres
 440 oval = 2.3 Acres

2. **Fields Used in Spring** - When fields are used during spring and not used intensively during fall, the February - March seeding would be postponed until mid-August through September. Seeding methods and pesticide applications would be the same.

3. **Fields Used in Spring and Fall** - When fields are used during spring and fall, very little can be done to improve the field by establishing new grass. The best attempt is to seed in early March, again in late August and maybe again when play ceases in late May or early June. Summer seedings are almost never successful because of weed competition, disease, drought and heat. Even if seeding is not feasible, the other program suggestions of mowing, fertilizing, coring, etc. will develop a more vigorous grass to resist wear. Where traffic cannot be removed for seeding and grass recovery, add topsoil or sand to the heavy use areas to divert water that causes extensive mud problems. If summer is the only time of year that seeding can be accomplished, consider converting to bermudagrass or at least consider seeding bermudagrass in the heavy traffic areas.

Material	Approximate Amount Needed Per Field (1.6 Acres)	Approximate Annual Field Cost
Urea* (45-0-0)	900 lbs	\$200
Trimec - broadleaf herbicide	3 Qts.	\$23
Barricade - crabgrass pre-emergent	2.5 lbs product	\$123
Tall fescue or Perennial ryegrass seed	200 lbs**	\$200
Annual Maintenance Cost		\$546

* A soil analysis may indicate that additional fertilizer such as 10-10-10 and lime may be needed.

** If turf is good except in middle of field (1/3 Acre), the total seed cost can be greatly reduced if only the middle of the field is seeded.