

# **ATHLETIC FIELD MAINTENANCE**

## **Bermudagrass Program**

### **(for summer/fall play)**

*A. J. Powell, Jr., Extension Turfgrass Specialist*

#### **LATE FEBRUARY - EARLY MARCH**

1. If the field is not covered with straw, and cool season (green) weeds cover as much as 25% of field, spray with one-two quarts/Acre of RoundUp. Do not spray if bermudagrass is showing some green leaves or stems. The bermuda must be completely dormant.
2. Collect soil samples randomly over field and take to County Extension Office for soil analysis.

#### **LATE MARCH - EARLY APRIL**

If the field was covered with straw or a synthetic cover, after four or five consecutive warm days, remove the cover.

#### **MID-APRIL**

Fertilize with 150#/Acre of urea (46-0-0) or 200#/Acre of ammonium nitrate (34-0-0). Also add phosphorous, potassium or lime if the soil analysis indicates a need.

#### **LATE APRIL - EARLY MAY**

1. Apply Ronstar G pre-emergence herbicide (100-125 lb/Acre) after bermudagrass green-up and before crabgrass and goosegrass germinate. If crabgrass germinates before bermuda green-up, omit this application and apply two application of MSMA as suggested in JUNE-JULY-AUGUST (#4). DO NOT apply any pre-emergent herbicide if you anticipate a need to seed bermuda. The seed will not likely germinate for several months.
2. Evaluate initial green-up and determine amount of winterkill. Locate source of either bermudagrass seed or sprigs, or consider transplanting thin-cut, 'live' bermuda from in-zones or within field corners.
3. Aerify-core field by traversing 2 to 4 times with a 3/4" open spoon/coring tines.
4. Add good topsoil or sand to low areas (depressions) that hold excessive moisture.

#### **MAY**

Early season mowing may be required to reduce the competition from weed species. A rotary mower is usually best for these weeds and these should be mowed as close as possible. When the bermuda greens up, begin mowing at approximately a 1" height. Two or three weekly mowings may be needed. Reel mowers will cause less scalping and will more effectively cut bermudagrass. Do not let bermuda get above 1½ inches in height between mowings.

## **MID-MAY to MID-JUNE**

Seed or re-sprig winter-killed or worn-out areas. This is the only time of year that the newly planted bermuda can be established, i.e. established with confidence that it will survive a sever winter and will obtain complete cover for fall play.

### **A. Seeded bermuda**

For establishing bermuda from seed, consider the following methods:

1. Slit seed the bermuda using a power seeder or a tractor driven turf renovator. Seed at the rate of 25 lbs of pure live seed/Acre and traverse the field at least two times. If seed is coated, double the above amount.
2. Aerify or core areas to be seeded at least 5-7 times to loosen soil and dead plant material. Then broadcast 50#/A of seed (100#/A if seed is coated) and very lightly rake or chain drag the area to get shallow incorporation.

### **B. Vegetative establishment.**

For killed areas of several thousand square feet, consider the following no-till method of planting a vegetative bermuda:

- (1) Aerify/core killed areas 5-7 times to loosen soil and dead plant material. Use large (3/4") coring spoons/tines.
- (2) Use a mechanical sod cutter to remove sod from the end-zone, nursery area or from within the corners of the field. Cut the sod extremely thin, i.e., with essentially no soil remaining with the sod. You will not be able to roll the sod since it will be in small pieces with little or no rhizomes. The areas from which the thin sod is removed will totally recover within about three weeks.
- (3) Pick up the sod pieces with a manure fork and load on a pickup truck or utility vehicle.
- (4) Throw or place the sod pieces (green side up) onto the bare areas, even if some weeds are present.
- (5) Keep the area wet for one to two weeks until sprigs start to grow. With an automatic irrigation system, set the clock to run each station for about 10 minutes every two hours during the daylight period.

- C.** For large killed areas such as the entire area between hashmarks, including bench areas, consider one of the following methods of re-establishment of vegetative varieties:

#### **Method I**

- (1) Disk or rotovate, being careful not to destroy the crown (field slope).
- (2) Apply 150 lbs urea or 200 lbs ammonium nitrate per acre. If soil tested, apply recommended lime, phosphate and/or potash and lightly disk and smooth surface. A loose, friable seedbed is necessary. Broadcast about 6 to 10 bushels of sprigs/1000 sq ft.
- (3) Use a light tractor to disk (cover) or "tuck" the sprigs into the soil. The disks should be set up very straight to prevent ridging.

- (4) If lots of sprigs appear to remain on the surface, you can use a blunt tool, e.g., straight hoe, to tuck additional sprigs into the soil by hand.
- (5) Keep area wet for about two weeks until sprigs start to grow.
- (6) To prevent crabgrass/goosegrass problems, you may choose to apply Ronstar crabgrass pre-emergence herbicide immediately after sprigging. If Ronstar is not applied, several applications of MSMA can be applied to control the annual grasses after the bermudagrass begins to fill in.

### **Method II**

- (1) Prepare the soil as described in Method I.
- (2) Contract a company to plant the bermuda sprigs using a broadcast planter that drops the sprigs into the surface and presses them into the loose soil.
- (3) Irrigate and control crabgrass as described in Method I.

### **Method III**

- (1) Aerification - Core field 5 to 7 times to loosen soil and dead plant material. Use large (3/4") coring spoons/tines.
- (2) Contract a company to row plant the bermuda sprigs using a row planter that plants the sprigs into the undisturbed surface, i.e. it is unnecessary to prepare a seedbed.
- (3) Irrigate and control crabgrass as described in Method I.

## **JUNE - JULY - AUGUST**

1. If attempting to establish new sprigs or seed, and/or get quick coverage of bermuda, apply 150# urea/Acre or 200# ammonium nitrate/Acre every two weeks. Irrigation immediately after applying fertilizer will reduce foliar burn potential.
2. To get maximum rhizome production and winter hardiness, do not apply more nitrogen than necessary to get good coverage. If you are approaching 100% coverage by mid-summer, do not make additional nitrogen applications. Nitrogen should not be applied after September 1.
3. Irrigate as needed. Probe soil to detect dryness. Over-irrigation will reduce rhizomes and increase winter loss of bermuda. Usually, one or two irrigations per week is sufficient, even in extended drought. If rain occurs or if the weather is relatively cool, summer irrigation will not be needed for bermudagrass. Unless establishing new sprigs or seed, never irrigate bermuda daily.
4. If crabgrass and goosegrass become competitive, spray with MSMA. To get complete weed kill, a repeat treatment will be needed 7 to 10 days after initial application. Some discoloration of bermuda may be evident. Do not spray when temperatures are above 85°F or when turf is drought stressed.
5. If broadleaf weeds such as dandelion, plantain, clover, and knotweed are prevalent, spray with Trimec or other broadleaf herbicide (See AGR-78). MSMA sprayed for crabgrass control will likely kill most broadleaf weeds.
6. Core aerate field each month, with 2 to 4 passes over the field for each aeration date.

## SEPTEMBER - OCTOBER

If necessary to get improved color for games to be played in late October, in November, or in spring when bermudagrass is dormant (brown) consider:

1. Overseeding in early September with 10 to 20 lbs/1000 sq ft of:
  - a. *Annual ryegrass*. This is the most inexpensive overseeding and it dies out naturally in early summer. It has a coarse texture and light green color.
  - OR**
  - b. *Perennial ryegrass*. The turf type ryegrasses have a dark green color and fine leaf texture. Normally, it is necessary to kill-out the ryegrass during late winter with RoundUp or in spring or early summer with Revolver or Monument. Perennial ryegrass must be killed out or it will likely dominate the bermuda and prevent the bermuda from completely re-establishing in the following summer. Especially for baseball fields, overseeding bermuda is necessary for a quality spring turf and natural appearance. However, the ryegrass must be killed out immediately after the baseball season is over.

### **BEWARE OF OVERSEEDING:**

- (1) If traffic cannot be removed for two-three weeks while the seeded ryegrass is germinating and beginning to grow, then don't attempt to overseed. Young ryegrass seedlings will not survive traffic and the field will still be brown in the middle, with contrasting green color on the sides.
- (2) A freshly lined field is attractive even in dormant bermuda.
- (3) Overseeding does not improve playing conditions; seedlings are very weak and only add color.
- (4) The improved color is usually evident only during the last couple of fall games.
- (5) Overseeding does not improve bermudagrass winter hardiness.

2. Spraying with a green turf-colorant. It is necessary to have an accurately calibrated sprayer in order to get uniform coverage. Also, for a natural appearance, the colorant must be sprayed in late September or early October just prior to bermuda losing its natural green color.

## OCTOBER - NOVEMBER

Apply 150 lbs/Acre of muriate of potash (0-0-60) to help protect the bermuda from winterkill.

**EARLY DECEMBER**

1. After bermudagrass has turned brown (dormant), cover the field with 4 to 6" of loose straw. This may require 300 to 400 bales/Acre. Synthetic covers may also be used. Thick straw or dark colored covers will also reduce weed invasion. Although the synthetic covers may be 3 to 5 times more expensive than straw, they will often last from three to five years or more if properly handled and stored.
2. Use netting or string and stakes (pins) to keep the straw (or cover) from blowing away.
3. Covers give winter protection, become an excellent deterrent to incidental traffic and the bermuda will green-up two to three weeks earlier the following spring.

**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. Bermudagrass field - Spring play.

Early spring traffic is very damaging on bermuda since the soil is usually wet, the bermuda is attempting to recover from winter dormancy and you can seldom use winter covers (straw or synthetic) for added protection. However, the maintenance program is similar to that already discussed above.

3. Product cost estimates for a typical field:

<b>Material</b>	<b>Approximate amount needed per field (1.6 Acres)</b>	<b>Approximate Annual Field Cost</b>	
		<b>Necessary Items</b>	<b>Optional Items</b>
Urea (45-0-0)*	1000 lbs	\$300	
Potash	250 lbs	\$45	
Ronstar 2G	200 lbs		\$200
RoundUp Pro	2 Qts		\$70
MSMA (2 applications)	1 gal (6# ai/gal)	\$25	
Trimec Broadleaf Herbicide	3 qts	\$23	
Straw	600 bales (15 ton)		\$1,800
Sprigs** (if needed)	200 bushels		\$400
<b>TOTAL</b>		<b>Necessary \$393</b>	<b>Optional \$2,470</b>

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

\*\* Amount needed for center of field only; excludes transportation cost.