

OVERSEEDING BERMUDAGRASS SPORTS FIELDS

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The quality of sport fields in Kentucky has greatly improved with increased utilization of the more winter-hardy bermudagrasses. When compared to tall fescue, perennial ryegrass and Kentucky bluegrass the bermuda fields offer a faster (shorter height), more resilient (cushion), and more uniform surface. After initial establishment, the bermuda fields are also easier and less expensive to maintain.

A major concern expressed by some administrators and many spectators is that several late-season football and soccer games must be played on dormant, brown bermudagrass. Since it looks 'dead' many believe it is a poor playing surface. Green paint or overseeding with a cool-season grass are often considered a solution.

The truth is that dormant bermuda has excellent playing quality. Play occurs on the residual grass and, if maintained properly before growth ceases in the early fall, the grass can withstand considerable play. Unfortunately, excessive field use will cause the loss of some resiliency and it can also cause increased winter kill. These negative effects, however, cannot be overcome by painting the field green or by overseeding with cool season grass.

ADVANTAGES OF OVERSEEDING

There is no conclusive research that shows that overseeding improves anything except color. Since the overseeding is made during early fall, it remains a weak seedling throughout fall play and does not improve traction or wear tolerance. In fact, some believe that it may make the field 'slick'. After the ryegrass becomes more mature, during late fall or spring, the active ryegrass roots may decrease divot size.

Excessive moisture is a serious problem encountered when bermuda is dormant. When the growth of bermuda stops during the fall season, the only drying that can occur is through normal evaporation. The growing cool-season grass can remove some moisture in the spring, but it would be minimal in the fall while the grasses are mere seedlings. In this respect however, overseeding may be most beneficial during spring play. Overseeding will also reduce the encroachment of winter annual weeds such as chickweed, henbit and *Poa annua*. However, it doesn't eliminate them. In order to protect the perennial ryegrass for use during the following spring season, you cannot use Round Up for weed control in late winter or early spring. It is necessary to consider overseeding of spring used baseball fields. No one wants to play all games on dead-looking bermudagrass. They do want to play on ryegrass that looks vibrant and can be striped with the mower.

DISADVANTAGES OF OVERSEEDING

A major concern when overseeding bermuda with perennial ryegrass relates to the summer recovery of bermuda. Most of the turf-type perennial ryegrasses have been developed for improved heat tolerance, dark green color and fine texture. Unfortunately when over-seeded in the fall, ryegrass becomes very hardy by the following summer and will not transition (die) out. Within just one or two years of overseeding, bermuda fields convert to ryegrass and the bermuda is predominantly lost.

Although we have many excellent ryegrass fields in Kentucky, ryegrass does not have the same resiliency and uniformity of bermuda and ryegrass requires more irrigation, weed control and disease control in order to maintain quality. If not properly renovated (slit-seeded) each year, ryegrass will become extremely clumpy and dangerous. In addition, many fields are heavily used in the fall and spring; the only seasons that ryegrass can be successfully reseeded. May, June and July ryegrass seedings can be made when fields are not being used but environmental stress and weeds most often prevent successful establishment. One of the big advantages using bermuda is that it can be easily repaired during early summer when most football and soccer fields are not being used.

PAINTING FOR GREEN COLOR

Many turf colorants are presently available and these can be very effective. In order to save money, some field managers will go to a local paint store and pick what he hopes is the correct color of latex paint. Whichever material is used, it is very, very difficult to get the correct dilution to make a natural green turf color; it is equally difficult to get it applied uniformly (without streaks), and it will cost several hundred dollars to color a field. The most success can be obtained if you apply a turf colorant as soon as bermuda ceases growth and before it loses its natural green color. If the field is still growing rapidly when sprayed, the colorant may be mowed off or just diluted by the extra growth. To get maximum uniformity and the most natural color, it is best to spray the colorant early in the season and then make one to three additional applications over the next three or four weeks.

OVERSEEDING FOR COLOR

Overseeding does improve turf aesthetics! In order to withstand the overseeding procedure and increased competition, however, bermudagrass must be healthy and dense. When overseeding during the fall, you cannot mutilate the bermuda when preparing a seedbed without increasing the potential for excessive bermuda winterkill.

GRASS SELECTION

Since you must get quick establishment and seedling wear tolerance, the only choices are among the ryegrasses. Consider the following advantages and disadvantages of each:

Annual ryegrass

- Seeding rate, 10-20 lbs/1000 sq ft (450-900 lbs/Acre)
- Very coarse texture, light green color.
- About 1/3 to 1/2 as expensive as perennial ryegrass.
- Will die out in early summer - does not require special management or chemicals to hasten transition. However, annual ryegrass typically dies in late June or early July and this limits the regrowth period for bermudagrass.
- Will establish a few days quicker than perennial ryegrass.
- Has some potential for winter kill; thus only important if intending to use the field the following spring.
- Few named or improved varieties.

Perennial Ryegrass

- Seeding rate, 10-15 lbs/1000 sq ft.
- Only consider turf-type perennial ryegrass varieties and not common or pasture type perennial ryegrass.
- Excellent color and fine texture.
- Has excellent winter hardiness.
- Slightly slower to establish than annual ryegrass.
- Must be taken out (killed out) with a herbicide in late spring or early summer in order to allow the bermuda to recover.

Intermediate Ryegrass

Some varieties of intermediate ryegrass are now available. The overall performance is similar to that of annual ryegrass described above; except intermediate cultivars will not generally die out in summer and therefore must be herbicide treated.

SEEDING DATE

The best seeding date is usually around September 15, or approximately 2-3 weeks prior to the expected first killing frost. If you seed too early, then the actively growing bermuda will out-compete the new seedlings. Also, with early seeding, you risk getting seedling diseases such as pythium and brown patch. Especially when seeding early, fungicide treated seed would be suggested and it may be helpful to treat the bermuda with a growth regulator such as Primo in order to reduce the bermuda competition. If you seed too late, cold weather may prevent sufficient establishment.

FIELD PREPARATION FOR SEEDING

The more winter-hardy bermudas used in Kentucky, i.e. Quickstand and Midlawn, can usually be overseeded without heavy verticutting or slit seeding. However, to improve the overall health of the bermuda, a heavy coring (with cores pulverized) is advisable several weeks prior to overseeding.

BROADCAST SEED AND DRAG

Uniformly spread the seed in two or more directions. This is easily accomplished with a rotary spreader mounted on a tractor, pick-up truck or utility vehicle. Just set the spreader opening to apply a minimum amount of seed, then go over the field as many times as necessary to get the prescribed amount of seed spread. Ryegrass does not have lateral runners that spread into open areas - it stays put! After seeding, you should drag the field to help sift the seeds down to the soil level. A spring-tine rake, piece of chain-link fence, or carpet drag can be used. If equipment (topdresser) is available, a light topdressing of a soil or sand mix will improve establishment. This is very useful in heavy traffic area such as base lines, bench areas, between hash-marks, goal mounts, etc.

POST-SEEDING MANAGEMENT

Water - Lightly water the field several times each day until germination is nearly complete. Be careful to apply only enough water to keep the seed moist; do not allow water to puddle and displace the seed. After germination, gradually reduce the frequency of irrigation. Within about two weeks, turn the irrigation system (automatic clock) off and only apply additional irrigation if the new seedlings begin to wilt. Seedling diseases are often encouraged with frequent irrigation.

Mow - Ryegrasses, especially annual ryegrass, are very difficult to mow without fraying the grass blade tips. Always mow with a very sharp blade. The height should be set at about 1½ inches. Mow frequently enough that you never remove more than 1/3 of the foliage at any one mowing.

Fertilize - After germination, watch for signs of N deficiency, i.e. yellow patches or yellow streaks. After the bermuda has stopped growth and the risk of seedling disease has diminished, you may want to apply about ½ - 1# N/1000 sq ft. This rate is equivalent to 70-130 lbs ammonium nitrate per acre, 50-100 lbs urea per acre, or 250-500 lbs of 10-10-10 per acre. If needed for color, growth and/or wear recovery, this application may be repeated every 2-3 weeks. At least one of the applications should be made with a fertilizer containing potassium (i.e., 10-10-10).

POST-SEEDING USE OF FIELD

It is best to keep all traffic off the field for two to three weeks after seeding. If field commitments are tight, you can gain a few days of time by applying seed two or three days prior to a game and allowing the players to cleat the seed into the soil. By all means, keep traffic to a minimum and do everything possible to remove all traffic if the field is wet. Young seedlings will not take abuse. If a game or two is played during the germination period, be advised that the field will not look good because the high traffic area in the field center will not establish and will remain brown.

SPRING TRANSITION

If overseeded with annual ryegrass, no special management is required to rid the field of the overseeded grass. Just keep the field mowed to a height between 3/4 - 1". After the bermuda begins to green up, apply about 1 ½ pounds N/1000 sq ft to encourage bermuda growth and hasten annual ryegrass death. By mid June you should be able to assess the recovery potential of the bermuda. If areas were winter-killed, then repair should be accomplished as soon as possible.

If overseeded with perennial ryegrass, in addition to the above management, one or more of the following practices may be necessary to get rid of the ryegrass:

- (1) During hot May or June weather, on a morning when the dew is heavy, apply about 1 ½ pounds N/1000 sq ft as ammonium nitrate. Ammonium nitrate is a salt that will help burn out the ryegrass. It will also burn the bermuda, but the damage is temporary. This procedure is not usually more than 50% effective in killing out the perennial ryegrass. If the weather is cool when ammonium nitrate is applied, the ryegrass may increase its competitive effect and not be killed at all.
- (2) In May or June, spray the field with Revolver or Monument to selectively kill the ryegrass. This should not injure the bermuda and it should also kill *Poa annua* and many winter annual broadleaf weeds.

SUMMARY

It is obvious from this discussion that the health, persistence and quality of a bermuda field is not enhanced by overseeding. Overseeding does add color but the color enhancement is at a huge cost: money, labor, equipment, winter-kill risk, play reduction during heavy play season, etc.

Does it have to be green for the last game or two of the fall season?