

Question & Answer

with Rutgers University

By Dr. Jim Murphy and Brad Park

Q: Currently our soccer fields are all perennial ryegrass, I believe the variety that we are using is suboptimal and the beating it takes every year concerns me. I've done some research and I'm of the belief that we should migrate from ryegrass to tall fescue. More specifically, from the NTEP tests, Falcon V, Shenandoah III and Shenandoah Elite all look like excellent varieties for sports fields since they do very well on the wear tests and have an excellent appearance.

My concern is the existing ryegrass. I understand it's very competitive so I'm worried about over seeding with tall fescue just to have the ryegrass choke it out in a year. Would it be necessary to apply Roundup to the perennial ryegrass before planting tall fescue?

If you feel it's impractical to switch to tall fescue do you have any current test data on ryegrass and/or Kentucky bluegrass NTEP wear tests? I believe that even if we stick with the ryegrass but just switch to a better variety conditions will improve.

If you do think switching to a tall fescue is a good idea would you recommend any specific varieties of Kentucky bluegrass to mix with it? I heard at the field day this week that seeding with a fescue/rye mix is a bad idea since the 10% rye will overtake the 90% fescue in a couple of years.

Basically, any seed recommendations you may have would be appreciated.

A: You've asked some very pertinent questions. You could attempt to slit seed or use an Aera-Vator to begin introducing tall fescue to the existing soccer fields once or twice a year. There is no guarantee of immediate success; however, overtime you may see some tall fescue become established. Perennial ryegrass is still the best choice for routine overseeding of high traffic areas like goal creases. I would not use a Kentucky bluegrass/perennial ryegrass mixture for the purpose of overseeding high traffic locations. Use a blend of 100% perennial ryegrass. There are varieties with improved wear tolerance, turf quality, and gray leaf spot resistance available (see discussion below).

In an ideal situation, to completely transition from perennial ryegrass to tall fescue, applying Roundup makes sense. However, field closure, access to irrigation, and renovation timing all enter into the equation. If you can't close the field, don't have access to irrigation, or can't seed between August 15 and September 30, I would not apply Roundup.

The tall fescue varieties you mentioned are all good varieties. Selecting a variety based on turf quality, brown patch susceptibility, and wear/traffic tolerance will provide you with a good choice for a sports field.

Regarding mixtures, if your goal is to have a tall fescue field, I would not mix perennial ryegrass with the tall fescue. If your goal is to have a Kentucky bluegrass field, I would not mix perennial ryegrass with the Kentucky bluegrass.

The question of tall fescue/Kentucky bluegrass mixtures is a good one and Dr. Jim Murphy and I are discussing performing some research in this area. Based on what I'm observing in our Hort Farm II tall fescue study, I am not convinced Kentucky bluegrass needs to be added to tall fescue - assuming tall fescue varieties are established with superior turf quality, brown patch resistance, and wear/traffic tolerance. It has been observed that tall fescue/Kentucky bluegrass mixtures gradually transition to predominantly Kentucky bluegrass, so there is a strong argument to limit the initial seeding to 100% tall fescue, assuming your long term goal is to have a tall fescue field.

Attached are three pdf documents detailing the research results from Hort Farm II in 2009 for Kentucky bluegrass, perennial ryegrass, and tall fescue. We applied wear to our perennial ryegrass test in September 2009 and the results are in the document. For the purposes of overseeding, I suggest selecting perennial ryegrass varieties based on turfgrass quality, gray leaf spot resistance (usually delineated by 'GLR' or 'GLSR'), and wear/traffic tolerance. - BP

Editor's note: The Kentucky bluegrass, perennial ryegrass, and tall fescue research results referenced above are available by contacting Brad Park (park@aesop.rutgers.edu).

Q: I read the fact sheet that Rutgers put out regarding infield mixes. [See: Skin Surface Selection and Management for Baseball and Softball Fields <http://njaes.rutgers.edu/pubs/publication.asp?pid=FS1096>]. I am building a new baseball and softball field for the college facility that I manage in New England - where rain is always a factor in the spring. Drainage and playability in wet weather is a major concern. I know that clay is used as a binder and that too much sand produces an infield mix that breaks down too easily. If you use an angular sand instead of a round sand can you increase the sand percentage without breakdown being an issue? One of the local sand mines has a material which is made from crushed rocks; it is like a coarse sand and packs very well. I have used it previously for cart paths on golf course. I am wondering

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management strategies with the sports field manager. Also, while I fully recognize the labor intensive nature of infield tarping, this is an effective means to keep water off the infield if rainfall is imminent.

As for the magnesium chloride, I would not view it as a substitute for the ability to supply water to the skin. Coarser, sandier mixes will tend to lose stability when dry; water is critical to provide good footing during dry periods. Also, field design should include an irrigation provision to water the mix (including a quick coupler behind the mound). – BP

Q: The hot, dry weather has caused the turf in front of our municipal building to turn straw brown. Is it dead? Is it dormant? What actions should we take to improve turf conditions?

A: This has been (still is) a very difficult year for many turfs. The next few days or so are forecast to return to 90 °F highs with lows in the mid 70s °F, so stressful weather returns!

As a result, some areas of turf have gone dormant but it is increasingly evident that some areas have suffered severe damage, which will need some form of repair and rejuvenation. If your location has received some rain in recent weeks, the dormant areas should now be showing signs of re-growth. If re-growth is absent or sparse, then repair is probably necessary. I have observed that many severely damaged turf areas occur where the topsoil is very shallow (< 4 inches deep) and the subsoil is severely compacted. Such soil conditions were unable to provide enough water to the turf over sufficiently long enough period of time for the turf to develop physiological dormancy. As result, the grass plants died instead of going dormant. There are also cases where insects and/or diseases also contributed to death.

In any case, plans for repair and rejuvenation efforts need to take place as soon as possible since the prime seeding and sodding period is only a couple weeks away.

From a broad viewpoint, there are two general approaches to consider: 1) Overseed the turf or 2) Renovate the turf. Approach #1 makes more sense if you simply want to re-establish some turf cover with minimal effort and do not have underlying problems needing correction. Approach #2 is more effort but has more reward in terms of better appearance and ultimately a more durable and persistent turf.

Regardless of the approach you choose, you should have the soil tested (if you haven't already) to make sure pH, nutrients, and organic matter content aren't part of the problem in growing the turf. If you need a lab for this, the URL for the Rutgers Soil Testing Lab is: www.njaes.rutgers.edu/soiltestinglab .

Either approach will require some form of aeration/cultivation/tillage to tear up the dead organic debris that was the turf before it died. Tillage will help incorporate any recommended amendments and expose bare ground (soil) that needs to be in contact with seed or sod for repair to be successful.

With approach #1, the objective should be to core-aerate and stir as much soil as possible into the surface organic debris of the former turf. First, apply any recommended amendments, then core-aerate a lot to create holes about 2 inches apart. It is useful to chop up the aeration-cores with a verti-cutter or de-thatcher. Next, spread the seed thoroughly over the area being repaired. Use enough seed that you can actually see the seed fall into the core-aeration holes. Make sure that you use enough seed; most repair failures occur because not enough seed was applied during overseeding. A minimum of 4 pounds per 1000 square feet is recommended; tall fescue overseeding should probably apply 8 to 10 pounds per 1000 square feet. Rake the seed thoroughly into the soil after overseeding.

As for the selection of species, there are a number of choices for turfgrasses in our climate. Seed blends of perennial ryegrass typically work best for overseeding. Although perennial ryegrass establishes easily from seed, you will need to use more advanced varieties to result in more stress tolerant turf. Overseeding mixtures containing some Kentucky bluegrass and/or tall fescue can also be used but the immediate effects will most likely be from the perennial ryegrass in the mixture. Use seed mixture with low percentages (or none) of perennial ryegrass if your goal is to have these other species ultimately dominate in the turf. Most people think Kentucky bluegrass is the most attractive grass; however, this species is best to re-establish from sod (too slow from seed). Tall fescue is considered more stress tolerant but it is not quite as attractive as Kentucky bluegrass. Tall fescue can be established from seed or sod but it is not as easy to establish from seed as is perennial ryegrass. We do not recommend the varieties of tall fescue named 'Kentucky 31' or 'Fawn' for turf. These varieties are more useful as for pasture/forage and do not form a dense attractive turf. Turf managers and home owners will ultimately be frustrated with 'Kentucky 31' or 'Fawn' because of the more frequent mowing requirement. Moreover, many people will be tempted to apply a lot more fertilizer to these varieties to improve density and color of the turf. Fine fescues are another choice especially if you are ultimately interested in lower maintenance turfs. Unfortunately, high quality varieties of fine fescue seed is hard to find and sod is even more difficult to find.

Regardless of the species of grass you choice, you probably need to go to a professional wholesale/retail supplier/landscaper for high quality seed. Typically, big box stores provide seed that low priced and low to moderate quality although you can find some better quality seed if you look for it. Also, you can purchase some moderate to high quality varieties of seed at www.seedsuperstore.com

For approach #2 - if you believe the topsoil is very shallow (< 4 inches) and the subsoil is compacted, this would be a good time

to try and correct/improve that problem. First, apply any soil amendments recommended by the lab (fertilizer and/or compost are likely recommendations) and then till those into the soil as deep as feasible. Some landscape contractors have the tillage tools needed for this type of tillage - a heavy duty reverse rototiller is most commonly used. The soil will need a moderate water content (but not wet) for the tillage to go deep into the soil, so some pre-wetting with irrigation may be useful if natural rains aren't enough to moisten and soften the ground.

After amending and tilling, the loosened soil will need to be firmed with light rolling before seeding or sodding. Don't roll if the soil becomes soaked with rain, allow it to dry before. In fact, rain may do a lot of the re-firming for you. Apply a starter fertilizer to the re-firmed soil and rake-in lightly before seeding or sodding. Note that you should use 1/2 rates of fertilizer if you amended the soil with high quality compost or the soil has an inherently high organic matter content.

If you seed, rake lightly again after seeding to work the seed into the soil. If you sod, lightly roll the sod after it is placed to put the sod in good contact with the soil. Applying some type of mulch barrier after seeding is helpful in conserving water and improving seedling emergence and turf development.

Apply water immediately after seeding or sodding and don't let the seed, seedlings, or sod dry out. Light watering one to three times everyday are better at first. Change the frequency of watering to every 2 or 3 days after roots are 2 or more inches deep. Hopefully, irrigation won't be needed any later than mid October.

Plan to reapply 1/4 or 1/2 rates of fertilizer every 2 to 4 weeks to encourage a steady spread and thickening of the grass. Repeat fertilization until the turf development achieves 90 to 100% soil cover. Rapid cover of the soil is important to prevent soil erosion and minimize the invasion of weeds. Fertilization can be cut back dramatically once ground cover approaches 100% and the grass plants have healthy green appearance. Fertilization should not produce an extremely lush, dark green color or force too much growth. Cut back on fertilization rate and/or extend the fertilization frequency if leaf growth is so rapid that the turf requires mowing more than once per week.

As for timing, now is the best time to get started. If you can get the site prep done, you can seed or sod as early as 15 August. Ideally, you don't want to plant much later than 15 September in northern New Jersey and 30 September in southern New Jersey.

Two Rutgers Fact Sheets that provide additional information on this topic include *Renovating Your Lawn* [<http://njaes.rutgers.edu/pubs/publication.asp?pid=FS108>] and *Seeding Your Lawn* [<http://njaes.rutgers.edu/pubs/publication.asp?pid=FS584>]. - JM

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