

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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