

# The Battle against Weeds

The best way to maintain a weed free turf is by maintaining a healthy turf. I think we all remember that phrase in school. A healthy turf begins with a good fertility plan complemented by a good soil infrastructure, good quality water, good soil chemistry and proper cultural practices. If these things are in place, weeds tend to be choked out by a healthy stand of grass due to competition. But if there is a crack in the armor, weeds will take full advantage of that crack. Weeds are very opportunistic species and have no qualms about establishing a presence in unwelcomed areas. They will grow most anywhere that suits their ability to proliferate and survive. Have you ever noticed how different weeds grow in certain environments? Annual Bluegrass thrives in wet/moist conditions, goosegrass loves compacted areas or areas that are weak and worn out, crabgrass may prefer a poor soil, and dollar weed, like annual bluegrass, will find a nice wet area in the blink of an eye. These are just some examples of where weeds might infiltrate a golf course. No matter how hard one tries, sometimes even the best laid out maintenance plan may not be enough to overcome abiotic and biotic stresses that lend to the invasion of “Weeds”

on your course. At that point, you have no choice but to wage war against these pesky /unwanted plants.

This usually starts by selecting a post emergent or preemergent herbicide that has limited phytotoxicity to the established grass you are treating. While this may sound simple, it's not that easy. If these herbicides are strong enough to kill weeds, then they may have the potential to hurt and/or damage your established grass. If this happens, it could spell disaster for your turf, your job, and the condition of the course. Be careful!!

Think through all the "What ifs" that can take place when you are trying to keep these noxious weeds out of your greens, tees, fairways, and roughs. Your sales consult should help you in this area and explain how different products work and which ones might be best for your course with regards to safety and efficiency. Research what is best, don't just throw something out there because someone else did it at their course.

To me, the simplest way to keep weeds out of your greens is to keep them out of your fairways and roughs. The last place you want to apply herbicides is on your greens - if you can help it. Billy Fuller, former superintendent at Augusta National Golf Club told me about 40 years ago, "one of the best ways to keep your job is to keep herbicides off your greens". I don't think there has ever been a truer statement. As I mentioned in my

“12 Pillars of a Good Superintendent”, good greens are your ticket to salvation; so, take the most conservative route possible if herbicides must be applied to your greens. Remember, once they are applied, there is no turning back.

The application to control weeds in our industry gets a lot of attention when it comes to “Preemergent Herbicides” for fairways, tees, and roughs. These herbicides prevent weed seed from germinating and that makes it somewhat easy for the grower. Just go out and apply a selective preemergent herbicide with or without a fertilizer carrier and bingo! You have eliminated and/or prevented a lot of weed infestation with a lot of ease. All you must do is time your application in the spring or fall based on weather and what weed you are looking to control. If you get this right, most of preemergent herbicides work well.

With that said, some of these products have an upside and a downside to them. The upside is most of them stay where you put them. The downside is most of them stay where you put them. This may sound like a redundant statement, but it's not at all. As a superintendent or manager of turf, we like control over what we do. So, applying a preemergent herbicide that stays in place is a big deal. It is difficult to deal with a preemergent that moves out of their target area.

Preemergence herbicides that stay put are good if they are not overused, over applied, or used on the wrong soil.

This is where the downside comes into play. There seems to be a good bit of confusion on how products like dinitroanilines, pyridine, etc. break down in the soil as it relates to their half-life. Let me make this clear!!! These products are not leachable based on my experience. They stay where you put them. To my knowledge, the only way the half-life of these products is reduced is through microbial degradation or being absorbed by the organic composite of the soil. That's it! No amount of water is going to move these products out of the soil in my opinion. This is where one should pay particular attention to one's soil type as it relates to using these products. If you have a sandy growing medium with a low CEC, the soil may be more prone to root pruning. If you have a heavier soil with a high CEC, the chances of root pruning may not be as great in my opinion. If these products are overapplied to the soil, they not only will prevent weeds from coming up, but may adversely affect the development of healthy new roots on your established turf. This is evident in the picture below where the roots are stunted. When this happens, there is no quick recovery. As one can see, these are not normal roots. The first root hit the

preemergent barrier, another root attempted the same feat, but each attempt failed.



If you find that you have developed root pruning from a preemergent herbicide, stop using it immediately. The problem is only going to get worse with repeated applications. Develop a safe post emergent approach until all the root pruning damage has subsided. I have seen some of these products last for several years before full recovery on sandy soils. If you have a

situation where a preemergent is thrown onto a green as seen below, it is most likely too late for something like charcoal.



A lot of superintendents have found success in using microbes as a drench to remediate the damage in conjunction with gentle aerification. If the half-life of the preemergent is short lived, recovery may not be as painful. In this case, Prodiamine was accidentally thrown onto an ultradwarf green. It created massive root pruning. This was a tough recovery. These products must be respected and handled with care!!!

Other symptoms that may be present from preemergent damage may include excessive disease pressure, dryness of turf, yellowing of the plant or chlorosis, Bermuda mites, poor

reaction to fertilizers, poor wear tolerance, bunkers caving in, shade damage that is not normal, winter kill, etc. The list can go on. My favorite one is mistaking nematode damage for preemergent damage. If you have any of these symptoms, consider contacting someone like Dr. Fred Yelverton, Weed Scientist, NCSU or Dr. Bert McCarty, Turf Specialist, Clemson. They can most likely guide you in the right direction or help you identify if the herbicide you are using is creating a problem or not. Make sure you tell them everything. If they do not have all the facts, they cannot help you effectively.

Keep your grass healthy and weed free, and life will be good on the golf course!!