Part Two: Tifeagle and Champion

During the initial article on managing Tifeagle and Champion, I discussed the growth habit of the two cultivars and how important it was to plant and maintain them on a substrate that had a good CEC with good moisture holding capacity. Once they were established, it was necessary to lock the stolon mat in place with a finer sand for them to perform as a putting surface grass. In conjunction with using a fine sand for stolon stabilization, a coarse sand would be used during aerification to augment the edaphic environment. As a part of this post review, I also reiterated the importance of having quality irrigation water. These components would set the foundation for short term and long-term success.

To me, the next step is to implement a nutritional program that is relative to accomplishing one's goals. This program should include nutrition that feeds the soil and the plant. At a quick glance, soil nutrition begins with maintaining the proper levels of calcium, magnesium, potassium, sodium, and hydrogen as a part of one's base saturation in the soil along with other nutrients. Therefore, maintaining good soil health is essential to

good plant health. So, pay attention to what is going on in the soil.

Now, let's get into some thoughts on how to manage Tifeagle and Champion nutritionally for putting surface quality. First, these two grasses should be managed from the top down using a foliar approach with conservative amounts of nitrogen. This is a must. The idea is to redirect energy from the shoots to the roots with products that provide just the right amount of N and other nutrients that complement that approach. The last thing one needs is too much nitrogen in managing these two grasses that are top growers (stoloniferous). This will result in top growth at the expense of root growth. There is an old saying, "Don't cut off more than you have left." Too much nitrogen on Tifeagle and Champion will exacerbate this scenario.

Typically, when one gets their growth out of balance with too much nitrogen, their first reaction is to calm the plant down with a PGR. But be careful with this as it may magnify an already difficult situation. High rates of PGRs can cause stolon stacking due to internode compression. This may exacerbate grain inconsistency and impact one's ability to manage the stolon mat correctly with the right sand and use of mechanical practices, e.g., grooming, vertical mowing, mowing, etc. When this happens, the putting surface may become very distorted

and uneven. At that point, there is only one way out - gradual tapering of the PGR with minimum nitrogen inputs or dethatching and sanding. If this happens, it will require a lot of patience from everyone involved – especially the golfers. In other words, overuse of PGRs to fix excess nitrogen applications is not the right fix. Below is a picture of PGR overregulation.

One can only imagine how difficult it would be to come “Off the Wagon” if you were in this situation. So, find the right balance and you should never be presented with this problem. PGRs are great, but should not be used as a quick “fix” to get you in and out of trouble from utilizing too much N.

Now that we have identified the do’s and don’ts of nitrogen and PGRs on Tifeagle and Champion; let’s identify some nutritional thoughts that may help these two top growing cultivars perform as putting surface grasses. Potassium nitrate (KNO_3) is a great place to start. It can be the foundation for either one of these cultivars nutritionally. Being a nitrate nitrogen, it is readily available for plant uptake and a predictable source of nitrogen and potassium. It will also promote the absorption of other critical nutrients like calcium, magnesium, and phosphorus. And it can be beneficial in combating salts. Potassium nitrate in my opinion is the “King of Nutrition” in most cases for Tifeagle and Champion. As an example, one may go out with 0.125 to 0.05 pounds of Nitrogen or less per 1000 sq. ft., with at least 1.5 gallons of water per 1000 sq. ft. with no water-in. The amount of water per 1000 sq. ft. is critical to prevent burn due to its salt index (74). Always spray in early morning or late afternoon for best results. If you are not familiar with the benefits of using nursery

grade KNO_3 as a foliar spray, I would suggest you do some R&D. Not only is it a good N source, but it brings a lot of potassium to the table – which is critical to good plant health. It is also compatible with most all products such as micronutrients, kelp, humic acid, amino acids, calcium, magnesium, map, etc. The list can go on. Honestly, I don't know of one nutritional product that can't be sprayed with potassium nitrate. But as always, do your homework. One can also spray a Triazone urea with it if a slow-release nitrogen is required to sustain growth. Sometimes potassium nitrate can peter out before the next spray. Triazone urea may prevent this from happening.

There are many other ways to get from A to B with quality products. Potassium nitrate is just one of them, but it covers a lot of bases. There are name brand products that can mimic potassium nitrate with lower salt indexes if worry over burn is a concern. It will just cost more money.

The other two products that I believe in strongly are phosphites (increase phytoalexin response) and salicylic acid (hormone enhancement of immune system). These two products can enhance the resiliency of Tifeagle and Champion during abiotic and biotic stress times – especially at lower heights of cut. Read up on them. They can give your fertility program "Punch Power" and enhance the plants' defense mechanism. This

punch power is not without proper timing. Frequency of use is the key in utilizing these products. Random usage is a waste of time and money in my opinion. These two products must be used frequently for them to maintain their efficacy.

As a matter of fact, frequency, and timing of any product is everything when it comes to maintaining Tifeagle and Champion. Sometimes it is not the products we use; it is how and when we use them that makes the most difference. These two cultivars need constant feeding for success. Think of them as always needing an appetizer, not a lot of food at once. The more frequently you feed them, the better they perform. There are two approaches: weekly and biweekly. A weekly approach is the most practical for most situations. Build your program accordingly to what fits your goals and conditions. If someone has a heavy soil substrate with a high CEC, nutritional inputs are usually lower because nutrients are not flushed out as quick. If someone has a lower CEC with a light substrate. This will typically require greater inputs and more nutrition. Usually, this means more PGR to compensate for the extra nitrogen.

Below is a picture of unbelievable roots managed with potassium nitrate along with other nutritional related products. No one can ever say these two cultivars can’t produce good roots. The picture below shows a substrate on greens that is

built with a 70/30 mix that has been aerified and top-dressed. The layering is where a #35 sand was used to create macro pore space to compensate for the use of fine sands. As one can see, this had no adverse effect on rooting.

Once the plant is healthy and the stolon mat is properly locked into place, then it is time for surface refinement. What does surface refinement mean? Working the canopy through mowing, vertical mowing (grooming) and/or brushing to create leaf blade consistency by eliminating tufts of grass within the canopy and/ or fat leaf blades. This is what leads to good ball roll and great playability. Too much grass in the wrong proportions is a precursor to grain and inconsistency of a

putting surface. It is impossible to explain how much grass one needs to remove, but it usually starts with managing density in the right amount. This means using vertical mowing techniques with blades that cut through the canopy to selectively remove thick areas. Do not use blades that rip through the canopy that may dislodge the stolon mat. Use blades that cut through the canopy. One might consider worn-down blades are a better choice than a newer blades because they are more rounded on the edges. This will prevent ripping of the grass. The idea is to thin out the tuffs so the ball roll will not bounce or wobble over them. A great surface is one where the ball hugs the ground as it rolls end over end. If there are tufts of grass and voids in the canopy with fat blades, this condition will cause an irregular ball roll - even if the greens are quick. Remember, grooming and vertical mowing are one in the same. So don't confuse the terminology. The best way to vertical mow is up and back or in two different directions. Implement which ever one gives you the best result. Then double cut and top-dress afterwards if practical. If brushing is ever used, make sure it does not destabilize the stolon mat. This can accentuate scalping of the turf as it is being mowed. After sanding, it is a good idea to compress the sand into the canopy by rolling to reinforce stolon stabilization. This will serve as a foundation to support the

mowing units and lead to a good cut. In addition to using these auxiliary practices, back track mowing and/or double cutting is should not be overlooked. Double mowing helps control the directional growth habit of the grass by clipping it at different angles and frequency. So double cut as much as possible. It will not hurt the grass; it will only improve the surface by training its growth habit.

I look forward to discussing more about TifEagle and Champion in the next article on how to manage and keep these two cultivars in top shape for the golfers.