No Mow Grasses-

(Continued from Page 9)

Grass species:

- 'Intrigue' Chewing's fescue
- 'Minotaur' hard fescue
- 'Celestial' strong creeping red fescue
- Common sheep fescue
- 'SR6000' tufted hairgrass

*Fescue species were seeded at 3.5 lbs/1000ft2 and tufted hairgrass at 1 lbs/1000ft2.

Several sets of data points were collected to determine how viable each conversion method and turfgrass species was in conversion to no-mow, low-input areas. Treatments were evaluated for initial seedling emergence to determine how well the species were germinating and establishing within each conversion method. Ornamental value of no-mow, low-maintenance areas will play a large role in determining how golfers may accept these transition areas. For that reason, seedhead counts were taken in order to quantify the ornamental value of no-mow, low-input areas. Maybe even more important to a golfer than aesthetic value is the ability to find their golf ball and then have the ability to advance the ball. To get a sort of "playability" rating, biomass collections were taken. Biomass will tell us if the treatments are being over productive which can possibly lead to playability issues and also if a treatment is being under productive which may lead to a stand that is too thin allowing for weed invasion. Overall stand quality ratings were also taken. Overall stand quality took into account four other individual ratings: broadleaf weed invasion, Kentucky bluegrass regrowth, lodging, and rust incidence. Overall stand quality ratings took the treatment as a whole and provided a rating of 1-9 with 9 being the most ideal stand and 1 being the least ideal stand.

Conversion methods prior to seeding.

Initial Results

Biomass production from across conversion methods has had wide variations. The fumigation treatment resulted in areas with a large amount of biomass causing areas that tend to lodge and matte down. This can result in lost golf balls and playability issues if a ball is located in these high production areas. Both seed, then glyphosate and sod removal treatments produced areas with lower biomass production resulting in higher broadleaf weed numbers and greater Kentucky bluegrass regrowth and a lack of desirable species establishment. The seed, then glyphosate treatment have the largest amount of Kentucky bluegrass regrowth within the stand which is clearly not the desirable outcome of conversion. The sod removal treatments have the largest amount of broadleaf weed invasion. This is probably due to the roto tillers disturbance of the soil allowing for dormant seed to move to the top of the soil surface and providing an opportunity to germinate. The glyphosate, then seed treatment seems to provide a stand with the right amount of biomass production that can resist broadleaf weed invasion, does well at eliminating Kentucky bluegrass, and provides a stand that is playable and retains its aesthetic value. Although the fumigation treatment can provide a stand with fewer weeds, the lack of playability with lodging and matting has allowed the glyphosate, then seed treatment to be the better choice at this time.

Lodging of the fumigation treatment

Treatments - July 2008

The fine fescue species have continually risen to the top as a turfgrass that may lend itself to use in no-mow, low-input situations. Their native region of adaptation have naturally made the fine fescues species tolerant to shade, drought, low pH and have a low fertility requirement thus making them a natural low-maintenance grass [2, 10]. Data collected has provided some interesting initial results. Based on overall stand quality, 'Minotaur' hard fescue repeatedly was the best performing turfgrass in no-mow, low-input situations.

(Continued on Page 14)

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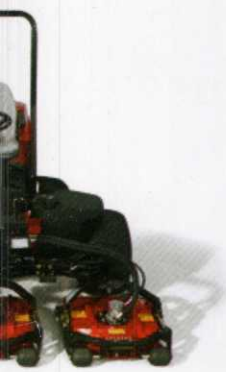

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No Mow Grasses-

(Continued from Page 11)

Not all conversion methods have provided acceptable turfgrass stand quality but even in those unacceptable situations hard fescue has provided the best overall turfgrass stand quality. Hard fescue plots across most conversion methods was best at creating a stand that resisted lodging which indicates the species may be ideal for providing a no-mow, low-input area that retains its aesthetic appeal and also its playability.

Without the use of herbicides throughout the study period, weeds in many treatments became a problem. However, 'Intrigue' Chewings fescue plots, regardless of conversion method, had lower amounts of broadleaf weed invasion. Recent research shows that Chewings fescues, especially 'Intrigue', have high allelopathic ability. Allelopathy is defined as any direct or indirect harmful effect by one plant on another through production of chemical compounds that escape into the environment [9]. Although allelopathy is not being tested in this study the results that we are seeing with a lack of broadleaf weeds in the 'Intrigue' Chewing's fescue plots seems to reinforce their allelopathic ability.

This research project is a first step in looking at converting Kentucky bluegrass rough to no-mow, low input grasses. Future studies should investigate seeding rates, other conversion methods, long term maintenance issues with biomass management, broadleaf weed and Kentucky bluegrass regrowth issues, and the use of species mixes. Understandably, not all rough areas are candidates for conversion. Courses still need to provide areas for errant golf shots to be easily playable. However, many golf courses maintain rough that is considerably out-of-play where very little golf traffic is seen. Each golf course is unique, but superintendents know specific areas that are great candidates for conversion allowing for a reduction of inputs and manpower and increasing the golf courses' environmental stewardship.

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The Apple, the Tree and the Law

By MARK REHDER
Certified Arborist, S&S Tree Specialists

Given the residentially wooded nature of North Oaks, it is no surprise that trees and the law are often hot topics. While tree law is still evolving there are a few fundamental laws that can be cited with regards to boundary trees. Boundary trees are those trees that are situated near or on a property line. Generally they are trees that are admired and adored until a problem arises.

In most states it has been established, with common law, that if any part of the trunk of the tree is on both sides of a property line the tree belongs to both owners. Even if the tree was originally planted on Mr. Right's property, and the trunk has grown onto Mr. Wrong's land, it is now owned by both neighbors. Obviously this can cause problems, and neighbors need to respect and communicate with one another before any action is taken upon the shared tree. Not only should this be out of a mutual respect for the neighbor but for the well-being of the tree as well.

In Minnesota, however, this is not the case. The courts would look at what the conduct of the adjacent landowners was to the tree. If both paid for, planted, and took care of the trees the tree would be considered a boundary tree and would be the responsibility of both parties.

Generally, a property includes the space above it as well. If Mr. Right plants an apple tree on his property and it eventually grows nice and tall and begins to spread its fruit laden branches over Mr. Wrong's fence, then does Mr. Wrong have the right to remove the branch? Legally yes, Mr. Wrong can cut the branch off the apple tree at which point it crosses onto his property. However, we all know that that is not the best way to prune a tree. The remaining stub will most likely continue to die back and may be a vector for other pests and diseases.

In a perfect world Mr. Wrong would have approached Mr. Right and made him aware that his apple tree was encroaching on his property and could they kindly prune it back to a major limb. Mr. Right would clearly oblige in this perfect world, and following national arboricultural standards, properly prune the branch back, and then invite Mr. Wrong over for a glass of freshly squeezed apple juice.

What if Mr. Wrong decided the branch didn't bother him all that much because he liked the small harvest he received each year as a result of this well intentioned, but clearly misguided, apple tree. Not so fast Mr. Wrong. The person that owns the tree owns the products as well. But just exactly how Mr. Right is going to harvest his tree, without permission, on the "wrong" side of the fence remains to be seen, maybe he could bring back the tools he borrowed last spring.

Even if Mr. Wrong has the right to remove the branch, Mr. Right has the right to the wood and fruit. Even if he doesn't want the branch and the fruit on the branch, it does belong to him and some issues have arisen as to exactly how this wood is returned to its rightful owner. However, any fruit that has fallen to the ground can become the possession of Mr. Wrong.

Legalese aside, the moral of this story is to cooperate and communicate with your neighbors. What you do on your property can adversely affect your neighbors property as well. Be respectful, be proactive, and don't just wait for the apple to fall from the tree.

(Editor's Note: The information contained in this article covers general principles of law as they relate to trees in Minnesota. However, each tree and location are unique, so before acting or making recommendations based on this article, it is necessary to consult with a knowledgeable attorney to figure out how the law applies to your situation. Sources: 1 In the Shade of a Tree: Analyzing the Tree-related legal problem. Steve Pihlaja and Lorrie Stromme, March 2002. 2 Trees and the Law. Tree City USA Bulletin No. 49.)

Super Dogs of the MGCSA

Pepper, *an 11-year-old Border Collie, Australian Cattle Dog (blue heeler. "Best $50 I've ever spent. Had her since she was eight weeks old." - Jeff Johnson, The Minikahda Club*

Lena *is an 8-year-old Yellow Lab born in Utah, raised in Colorado, hunts in South Dakota and lives in Wisconsin. - Erin McManus, Medina G&CC*

Zip, *the world's fastest goose dog, as well as the most popular crew member and best investment ever made according to most members. - Dale Caldwell, CGCS, Minneapolis GC*

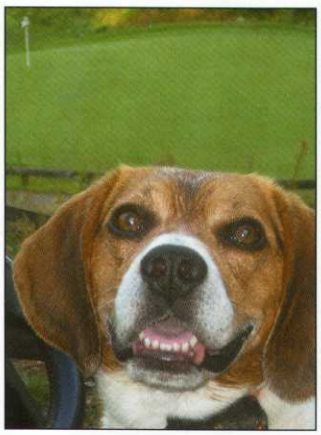
Sam *is a Border Collie at Midland Hills. He's pictured in stealth mode. - Mike Manthey, Midland Hills CC*

Vladimir *is an 8-month-old German Shepherd who patrols Oak Ridge for geese and intruders. - Craig Hendrickson, Oak Ridge CC*

Tempest, *3-year-old chocolate lab, loves winter because there are no play-time restrictions. Her favorite golf course activity is retrieving harvested waterfowl during the hunting season. - Eric Ritter, Spooner GC*

One year old, one hundred pound ***Sam*** *watches over Cannon Golf Club for geese, squirrels, gophers, and his favorite - the members! - Nancy Diepenbrock, Asst.Supt. Cannon GC*

Five-year-old ***Mona****, a 13-year-old* ***Champ*** *(background) are Jack Russell Terriers that love pheasant hunting and hate geese! - Dan Swenson, Refuge GC*



Albie *loves to chase the squirrels at Saint Croix National. - Ryan Gauster, Saint Croix National*

We rescued ***Fletcher*** *two years ago. He's a 6-year-old English Pointer who loves to run! - Joe Maloney, Hazeltine National GC*

"I guess they forgot to holler 'fore'... I need to putt before that greensmower gets here"says ***Sadie****. - Tom Johnson, New Richmond GC*

***Ziggy** patrols St. Cloud CC - Dan Hanson, St. Cloud CC*

***Olive** and her buddy **Jake**, a Siberian Husky. Our daughter Olive will be two in June and Jake will be seven in October - Chris Tritabaugh, Northland CC*

***Lena,** a 4-year-old Golden Retriever, enjoys every ride she can get and will go with anyone on the crew. - Eric Peters, North Links GC*

***Belle,** an Australian Sheppard, enjoys herding Canada Geese and controlling Woodchuck numbers. **Abbey,** a lab and Chesapeake mix, flushes Canada Geese from the water as well. - Steve Van Natta CGCS, CPH, Owatonna CC*

***Santos** is in charge of keeping the turkeys and geese off of the research plots here at the UW-Madison OJ Noer Turfgrass Research Facility. - Ben Pease, UW-Madison*

***Kelli,** a 12-year-old Springer/Lab. Once upon at time feared by all squirrels. - Paul Diegnau, CGCS, Keller GC*

Improving Pesticide Performance With pH Meters

By **AARON JOHNSEN**
Winfield Solutions

Have you ever noticed a control problem with a pesticide? Even if you haven't noticed a control problem, how do you know that you are getting the most effectiveness out of your pesticide applications? Effectiveness is influenced by many things, such as equipment, the applicator and the environment. One component not often considered or checked is spray tank solution pH.

WHAT IS pH?

pH is a measure of the concentration of hydrogen and hydroxide ions in solution. It is measured on a logarithmic scale from 1 to 14, with 7 being neutral. Below 7 is considered acidic. Above 7 is consider alkaline. The pH of a solution is ever changing. Over time pH changes due to changes in water treatment, weather patterns, the environment, etc. Even fertilizers can change the pH of water. For example, a phosphate fertilizer causes water to become more acidic and urea causes water to become more alkaline (Seaman and Riedl, 1986).

HOW DOES pH EFFECT PESTICIDES?

Certain pesticides break down in water. The breakdown of a chemical in alkaline water is called alkaline hydrolysis. Insecticides are the most susceptible pesticide to alkaline hydrolysis (Seaman and Riedl, 1986). Although much less common, acid hydrolysis is the breakdown of a chemical in acidic water. The speed and severity at which chemicals break down in water is influenced by the pesticide, water pH, length of time and water temperature (Park and Chong, 2010). Spray tank solution pH is most affected by the carrier water used to dilute pesticides. To avoid pesticide degradation, the pH of carrier water should be checked regularly.

TESTING pH

pH should be tested at a minimum once a month. A more optimum strategy would be to check the spray tank pH each day you spray. Use the following procedure to test the pH.

1. Allow the carrier water to run briefly to clear any stagnant water from the hose/pipes.
2. Fill the spray tank half way with carrier water. The goal is to test the water that will be used in the spray tank. An

(Continued on Page 21)

Figure 1: General guidelines for pesticide compatibility with carrier water.

Common Names	Brand Names	Acidic (pH < 6)	Alkaline (pH > 6)
Insecticides			
Acephate	Orthene	Fine	Sensitive
Bifenthrin	Talstar	Fine	Fine
Carbaryl	Sevin	Fine	Sensitive
Chlopyrifos	Dursban	Fine	Sensitive
Clothianidin	Arena	Fine	Fine
Imidacloprid	Merit	Fine	Test
Spinosad	Conserve	Fine	Test
Thiamethoxam	Meridian	Fine	Test
Trichlorfon	Dylox	Fine	Sensitive
Fungicides			
Azoxystrobin	Heritage	Fine	Sensitive
Chlorothalonil	Daconil	Fine	Fine
Fenarimol	Rubigan	Fine	Fine
Fosetyl Al	Aliette	Fine	Fine
Mefenoxam	Subdue Maxx	Fine	Test
Propiconazole	Banner Maxx	Fine	Fine
Thiophanate methyl	Cleary 3336	Fine	Sensitive
Triadimefon	Bayleton	Fine	Fine
Herbicides			
Chlorsulfuron	Corsair	Sensitive	Fine
Glyphosate	RoundUp	Fine	Test
Sethoxydim	Vantage	Fine	Fine

* Park and Chong, 2010; Seaman and Riedl, 1986