

experimental lines. Sixteen of the cultivars were Chewings, 12 were strong creeping red, 2 were slender creeping reds (both experimentals), and one hard (an experimental). The poorest-performing group had 13 cultivars (average ranking 3.5): 10 hard, 1 strong creeper, 1 blue, and the tufted hairgrass. Non-trafficked plots had 26 cultivars in the top group (average rating 6.5), 18 of which were also top performers in the trafficked group. Eleven were strong creepers, 10 Chewings, 4 hard, and 1 slender creeper.

Unlike traffic tolerance, turf color was largely cultivar-dependent, not species-dependent. For example, 'Wrigley' Chewings fescue, 'Rose' strong creeping red, and 'Bighorn' hard fescue all had a 7.0 rating, while 'Bridgeport' Chewings, 'Nordik E' hard, and 'Salsa' strong creeping red had ratings of 6.3 to 6.0. Turf color ranged from 6.0 to 7.0 with the biggest difference being moderately dark green to medium green.

Both summer patch and dollar spot disease resistance tended to be more affected by species than by cultivar. As a group, chewings and strong creeping red fescues had significantly better summer patch resis-

tance than hard fescue (Table 1). Both hard and Chewings fescues had good dollar spot resistance, while some strong creepers had good resistance and others ranked at the low end (data not shown).

The comparison between trafficked and non-trafficked plots is important because it shows different results for many of the cultivars. One-third of the top performers in the non-trafficked plots did not make the top group in the trafficked plots. In the trafficked plots, nearly half (13 of 31) of the top-performing cultivars were not in the top group of the non-trafficked turf. Thus, cultivar selection should be based on conditions similar to those in how the turf will be used and managed.

The large number of cultivars and diverse reactions to stresses and diseases can make cultivar selection a daunting task. There is no single way to determine which cultivar should be used. One method is to summarize rating values for traits of interest as shown in Table 2. A value was only used for a trait if the cultivar was grouped statistically as a top performer for that trait (Wisconsin ratings). If not, a zero was given for the trait. Percent cover was evaluated on a 0 to 100%

Table 2. Top fine fescue cultivars for fairway mowing heights under simulated golf cart traffic. Cultivars in bold are the top performers using data from 2000 (summer patch and dollar spot) and 2001 (spring greenup, quality, and cover) in trials conducted at Verona, WI. Cultivars which did not place in the top group based on statistical analysis for a trait received a zero for that trait.

Cultivar	Species	Spring Green	Quality ¹	Summer patch	Dollar spot	%cover(.1) ²	Total pts
Ambassador	Chewings	5.7 ²	5.1	8.0	6.5	0	25.3
Attila	Hard	5.7	0	0	0	0	5.7
Banner 3	Chewings	5.3	4.9	0	0	9.7	19.9
Bridgeport	Chewings	6.0	5.5	8.3	0	9.5	29.3
Brittany	Chewings	5.7	4.8	8.0	0	0	18.5
Culombra	Chewings	6.3	4.9	8.7	6.3	0	26.2
Cindy Lou	Strong creeper	0	5.2	8.0	6.5	9.5	29.2
Eureka	Hard	5.3	0	0	6.3	0	11.6
Florentine	Strong creeper	0	4.8	0	0	0	4.8
Heron	Hard	5.3	0	0	6.7	0	12.0
Intrigue	Chewings	5.7	4.9	8.3	6.7	9.5	35.1
Jamestown II	Chewings	5.3	0	0	0	9.8	15.1
Jasper II	Strong creeper	0	5.2	8.3	6.5	9.5	29.5
Longfellow II	Chewings	5.7	5.4	9.0	7.0	9.7	36.8
Magic	Chewings	5.3	0	0	6.3	9.3	20.9
Navigator	Strong creeper	0	4.7	8.3	7.0	9.3	29.3
Oxford	Hard	5.7	0	0	7.0	9.3	22
Pathfinder	Strong creeper	5.3	5.1	0	0	9.3	19.7
Reliant II	Hard	5.7	0	0	6.8	0	12.5
Salsa	Strong creeper	5.7	4.8	0	0	9.7	20.2
Sandpiper	Chewings	5.7	4.7	8.3	0	9.3	28
Scaldis II	Hard	5.7	0	0	6.5	0	12.2
Seabreeze	Slender creeper	5.3	0	7.7	0	0	13
Shademaster	Strong creeper	0	4.8	0	0	9.3	14.1
Shadow II	Chewings	5.3	5.0	0	0	0	10.3
Silhouette	Chewings	0	5.1	7.7	0	9.5	22.3
SR 5100	Chewings	6.0	5.1	8.3	6.3	9.3	35
Stonehenge	Hard	5.7	0	0	6.3	0	12
Tiffany	Chewings	5.3	5.1	8.3	6.3	9.3	34.3
Treasure	Chewings	0	5.4	0	0	9.8	15.2
Wrigley	Chewings	5.7	0	7.7	0	9.3	22.7

¹ Quality data were averaged over monthly ratings from May to October.

² Ratings were based on a scale of 1-10 where 1 = worst, 9 = ideal, except for cover. Cover values are 0.1 of percent cover ratings on a scale of 0 to 100%.



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basis; these values were reduced by one decimal place to provide a value of equal magnitude for computational purposes. The top performers were several Chewings fescues ('Bridgeport', 'Intrigue', 'Longfellow II', 'Sandpiper', 'SR 5100', and 'Tiffany') and three strong creeping reds ('Cindy Lou', 'Jasper II', and 'Navigator'). The only hard fescue that performed close to these cultivars was 'Oxford'.

Conventional wisdom dictates that a mixture containing blends of fine fescue species be used for establishment. Our data indicate only certain Chewings and strong creeping red fescue cultivars are useful for fairway conditions. Unfortunately information which tells us how well a cultivar performs when grown by itself may not be indicative of how well it will perform when placed in a mix or a blend. Recent studies using DNA markers to identify individual species in blends have shown many cultivars which perform quite well on their own do not survive well in a blend (G. Jung, 2002, *unpublished*). Another problem with using blends is that if one cultivar is extremely susceptible to a disease, the pathogen may grow sufficiently well to overcome the resistance of the other cultivars (Vargas, 1994). With species-specific diseases, mixtures using only one cultivar of each species may result in less disease than mixes containing blends. The goal would be to develop a turf stand with plants of individual species mixed sufficiently well with resistant or immune species such that there is not a critical

mass of susceptible plants that allows a given pathogen a "foothold". This approach may work with diseases such as summer patch which attacked all cultivars of hard fescue, though not all equally, while not impacting strong creeping red or commercial cultivars of Chewings fescues. This approach would not have an advantage non-specific diseases caused by facultative saprophytes such as *Pythium* spp. In any case, hard, slender creeping red, and sheeps fescues may still be useful for fairway mixtures if their performance in a mixture improves the overall turf performance. This summer we will be establishing research plots to determine if mixtures containing one cultivar of each species is as good or better than mixtures containing blends of each species. The project is part of a comprehensive plan to develop environmentally sustainable golf courses with reduced reliance on pesticides.

Literature Cited

- Meyer, W.A., and C. R. Funk. 1989. Progress and benefits to humanity from breeding cool-season grasses for turf. p. 31-48. In D.A. Sleper, K.H. Asay, and J.F. Pedersen (ed.) Contributions from breeding forage and turf grasses. CSSA publ. 15. CSSA, Madison, WI.
- Turgeon, A.J. 2002. Turfgrass Management, 6th ed. Prentice-Hall, Upper Saddle River, NJ.
- Vargas, J. 1994. Management of Turfgrass Diseases, 2nd ed. Lewis Publishing, Boca Raton, FL. ♣



Golf cart traffic simulator for testing traffic tolerance of fine fescue cultivars.



Two Events You Won't Want To Miss

By Tom Schwab, O. J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

The Wisconsin Turfgrass Association has two superb events for you this season. One is educational and the other is just darn fun. Both are good for the industry and for you as an individual. Put these dates on your calendar — August 13th for Summer Field Day and October 10th for the Golf Fundraiser.

Summer Field Day – Tuesday, August 13th, 2002, O.J. Noer Turfgrass Research Facility

Most of you have been to Summer Field Day, held annually at the O.J. Noer Facility in Verona, and we hope to see you again this

year. This is the event that gives the University Turf Program an opportunity to show off the research they're doing for you. It also gives you time to meet with all the turf professors and research staff in one place to discuss your agronomic concerns.

More talks are being added to the research tour this year to give you more of what you come to Field Day for. Two clinics are being added this year also — one is on sprayer calibration and the other focuses on enhancing wildlife habitat on your course. The research tour subjects will include two presentations on

fairway renovation. One renovation talk will explore using Basamid soil fumigant for the renovation process while the other talk will address using compost to improve fairway soils. High and low maintenance turfs will next be discussed for turfing those fairways. Two stops will then talk about new systems of putting green construction. The golf tour will round up with a fungicide/plant interaction talk, and one on ornamental grass maintenance.

The other big reason to come to Field Day is for the trade show. Every product, service, and piece of equipment that you need on the

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course is on display. And there are knowledgeable sales people and factory representatives to answer all your questions. Many vendors let you test drive equipment so that you can compare features between manufacturers. The vendors also sponsor an auction to raise money for turf research — so come prepared to take home some valuable prizes while helping the industry.

You never leave Field Day without getting your money's worth. In addition to the research tour and trade show there is great food, plenty of time to meet with your peers, and so much more to view and find out about. You may want to see the new developments occurring at the Noer Facility this summer. The Bruce Company is renovating nine adjacent acres this summer for more research land. This will let the professors conduct important new turf studies well into the future. We added some new parking and landscaping at the facility also. There are also about 10 new studies, which the research team is eager to tell you about. So we hope you all can make field day and tell your friends to come.

WTA Golf Fundraiser, Thursday, October 10th, 2002, Blackwolf Run

You also can't miss this year's golf fundraiser. This event is nothing but fun and is usually held at some of the nicest golf venues in the state. This year is no exception. Mike Lee will again be hosting the event, this time at the Meadow Valleys Course of Blackwolf Run. Nine holes of this course were used for the 1998 U.S. Women's Open. The price is nothing but spectacular and 80% of the proceeds are going to turfgrass research. That cost is \$125 to play this wonderful golf course and benefit the industry at the same time.

And golf isn't all you get. Every golfer gets a door prize. Many of those door prizes are worth more than the cost of registration. Some

of the prizes last year included:

- A \$450 Taylor Made 3 wood
- TVs and boom boxes
- Ping and other putters
- Other golf clubs
- Several gift certificates for golf foursome passes
- Brewer ticket four-packs (maybe I shouldn't have mentioned this prize this year)
- All kinds of clothes
- Fishing poles and camping gear
- And so much more

The price also includes cart,

practice balls, lunch, and golf prizes. It's quite the event for only \$125. I pay out of my own pocket to go every year, and I'm not that much of a golfer. Plus I have several friends that have become regulars, who love the first-class way this event is run. So tell your friends. Tell your members. You'll all have a blast. Everyone goes home with nice prizes, a great golfing experience, and a great day with colleagues. Details have been mailed out, but if you have questions call Audra at 608-845-6536. ♣



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What Impact Will Agricultural Company Mergers and Acquisitions Have on You?



By Dr. R. Chris Williamson, Turfgrass and Ornamental Specialist, Department of Entomology, University of Wisconsin-Madison

The landscape of the agricultural chemical company industry has drastically changed over the past two decades, especially in the last five years. As a result of various mergers and acquisitions, the number of agricultural chemical companies has been reduced to about four or five "major players" compared to the 15 – 20 that previously existed. Subsequently, the question: "What impact will this have on me?" is often asked. Will these mergers and acquisitions benefit or potentially cause the price of products to increase? Will I still get the quality of product support that I have in the past? These, and many other questions are important, and deserve an answer.

Initially it may appear that the larger companies are creating monopolies or positioning themselves to dominate the market place; however such mergers and acquisitions are a direct result of companies attempting to remain competitive. The agricultural chemical market is highly com-

petitive. And to be competitive requires placing the necessary resources (i.e., monies) into R & D (research and development), technical services, and marketing.

These entities are the driving forces behind the success of a company. A distinct synergy exists among R & D, technical services, and marketing, and the absence of one can be detrimental to others. Therefore, in an effort to stay competitive, various agricultural chemical companies have either merged or acquired other companies. Through these mergers and acquisitions, companies will continue to have the necessary resources to allocate into respective R & D, technical services, and marketing programs.

As a result, you, the end-user, will likely reap the benefits through improved products and even better product support than you have until now! ♻

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UW Extension Has Positive Influence on Wisconsin Golf Courses



By **Monroe S. Miller**, Golf Course Superintendent, Blackhawk Country Club

A childhood on a Wisconsin dairy farm in the 1950s and 1960s made me a rich man, rich with sweet memories of a thousand different everyday things. Few are sweeter than those that came from belonging to our neighborhood 4-H club, the Ideal Hilltoppers. Our one-room grade school was named the Ideal School and we certainly had lots of hills in that driftless area of Wisconsin. It was a very descriptive name!

The 4-H clubs and 4-H programs promoted agricultural education in rural areas like ours through crop, livestock and home-ec projects, record keeping and reports, demonstrations, local and county fairs and untold other ways. Participation in 4-H was my first conscious exposure to the activities of the Extension Service. The county had a 4-H agent in the Extension office at the county seat. Judges at community and county fairs frequently were faculty from the College of Agriculture and School of Home Economics at the University of Wisconsin in Madison. Publications we made use of were Extension publications.

Nearly everyone involved in production agriculture, in one way or another, took advantage of education and advice from county agents. Not much has changed; golf course superintendents of today all across Wisconsin receive valuable help from University Extension – from conferences, articles in the Grass Roots, phone calls to faculty in Madison or visits from them, to our Summer Field Day. Where would we be without Extension?

The vision and foresight of Congress in the middle 1800s and early 1900s gave us legislation that continues today to help us do a better job of managing our golf courses. The Morrill Land-Grant College Act was proposed by Sen. Justin Smith Morrill of Vermont, passed by Congress and signed by President Lincoln in 1862. From that act we now have the UW-Madison CALS. In 1887 William H. Hatch of Missouri introduced the legislation that Congress passed and the president signed that created our system of Agricultural Experiment Stations. The O.J. Noer Turfgrass Research and Education Facility is part of that system of stations in Wisconsin.

And on a warm spring day in Washington D.C. – May 8, 1914 – President Woodrow Wilson signed the Smith-Lever Act, legislation that created the Cooperative Extension Service. It didn't create much of a stir back then, but it certainly has had an enormous impact on our country in the subsequent 90

years.

The purpose of Smith-Lever was “to aid in diffusing among the people of the U.S. useful and practical information on subjects related to agriculture and home economics, and to encourage the application of the same.”

Realistically and practically speaking, the idea of Extension was to help people help themselves by taking (“extending”) the land grant universities to the people. It is still working today, as we know from first-hand experience, and philosophically fits like a glove with our Wisconsin Idea.

A question I sometimes hear is, “why do they call it *Cooperative Extension Service*?” The easy and obvious answer is because of the cooperation among the U.S. Department of Agriculture (federal), the land grant universities (state), and the individual counties

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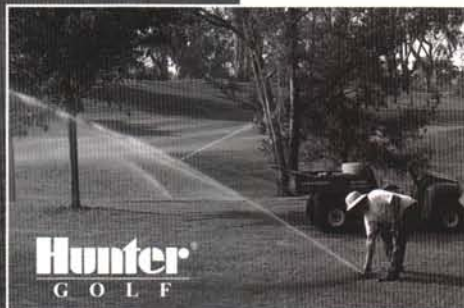
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