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## Winter Covers —

(Continued from Page 15)

side which was covered appeared very strong and was actively growing when the cover was finally removed in spring. A frost occurred and damaged the lush turf, but the portion of the green which wintered naturally was not harmed. The surface quality between the covered and uncovered portions of the green remained apparent into late spring.

Cool-season diseases such as pink snow mold, *Fusarium* patch, *Typhula* blight, root rot *Pythium* and cool-weather brown patch also can be more damaging under covers, where temperatures and moisture are ideal for disease activity. The actively growing plants often are succulent and more susceptible to pathogen infection. Fungicide applications made the previous fall can break down as a result of the accelerated growth and increased disease pressure. An extra fungicide application often is required to extend protection against cool-season diseases once the covers are removed.

**There are several practices that can be used to help assure successful cover use.** The covers normally are installed on greens in late fall or early winter, after turf growth has ceased and preventative fungicide applications have been completed. The covers are secured to the ground with large staples, or with spikes inserted through lathing strips. Once covered, the greens usually are not touched until late winter or early spring when temperatures warm or snow cover disappears. However, it is important to monitor the covered greens through the winter season, as high winds or vandals can tear the covers. It also is important to monitor for ice accumulations which form through the covers in areas of poor surface drainage. The ice should be softened with a darkening agent and carefully removed from the cover to avoid possible turf injury.

The critical management period for the turf occurs immediately after the covers are removed. The majority of failures that occur with covers take place at this time. Initial mowing should be completed as soon as possible, preferably with a walk-behind greens mower set at a height that will not scalp the turf. Remember, growth has been occurring under the covers, so the initial mowing height should be higher than that used during the regular season. The height can be slowly lowered during early spring until the desired height-of-cut is obtained.

The turf also should be assessed for disease activity. A granular application of a contact fungicide can be applied to extend control against the cool-season disease pathogens. The early spring fungicide application should reduce disease incidence through the remaining cold weather period.

**DO NOT PACK AWAY THE COVERS!** Instead, keep the covers near the greens.



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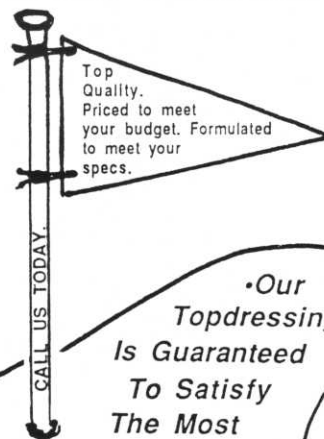
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# Snow Mold —

(Continued from Page 12)

snow mold potential. Rapid draining and drying of moisture and warming and drying of soil by mycelial crust removal can reduce disease damage, while promotion of early season growth (lite spring fertilizer applications ¼ # N/1,000 sq. ft.) will favor recovery.

**Fungicide treatments this last year** indicate that the level of control with non-mercurial products will be less than what was achieved with the three way combination of Caloclor, Chloroneb and PCNB. I would expect only 1 to 3% disease with 98 or 99% confidence. The better treatments resulted in 5 to 10% disease, and my confidence level for regular consistent performance from these product combinations is 90%. The products to try are:

Chipco 26019 and Daconil at 4 and 8 oz. or

Daconil and PCNB at 6 and 6 or 8 and 8 or 8 and 4 or

Chipco 26019 and Daconil and PCNB at 2 and 4 and 4 or

Vorlan and Daconil and PCNB at 2 and 4 and 4.

The above treatments are not in any preferred order, just a listing. Prostar and PCNB at 4.3 and 4 oz. also looked good this year. Several people remembered the two-way combination of Chloroneb and PCNB. It was tested last year at 2 oz. each but resulted in good control only at the TC's locations. Several reported good results with PCNB alone in the metro and south portions of the state.

Results of fungicide treatments in the Metro area are clearly very different than the same treatments in the Duluth area. Results on bent turf are better than when you have Poa. It is dangerous to take the report from one golf course site and generalize to another as disease pressure does vary. You should have tried a non-mercurial fungicide management program by now and be well into the process of determining the new snow mold management system for your turf. Data like the table below will be available again next year for those who still need more information.

Percent Disease (mycelium) or Damaged Turf

Product & Rate	Stillwater	Edinburgh	Duluth	
	% Disease 29 March	% Disease 29 March	% Disease 16 April	% Damage 10 May
UTC	62	16	100	76
Caloclor 3 oz.	0	0	0	0
Caloclor 1 oz. + Tersan SP 2 oz. + PCNB 2 oz.	2	2	0	2
PCNB 2 oz. + Tersan SP 2 oz.	0	0	88	40
Chipco 26019 2 oz.	15	0	83	46
Daconil F 8 Fl	17	0	89	53
Daconil F 16 Fl	13	6	87	47
PCNB 2 oz.	5	3	91	40
PCNB 4 oz.	0	0	79	47
Vorlan 50W 2 oz.	30	4	63	32
Prostar 4.3 oz.	10	0	85	55
Prostar 4.3 oz. + Tween 20 .025 Fl	3	0	93	50
Rubigan AS 8 Fl	20	8	79	42
Chipco 26019 2 oz. + Daconil F4.17 8 Fl	25	6	38	15
Chipco 26019 4 oz. + Daconil F4.17 8 Fl	5	0	11	8
Chipco 26019 2 oz. + PCNB 75W 4 oz.	0	0	45	17
Chipco 2 oz. + PCNB 4 oz. + Daconil F 4 Fl	2	0	4	7
PCNB 7 oz. + Daconil 6 oz.	0	0	4	6
Confidence Range	±5	±10	±5	±5

Highest disease levels are at sites with high levels of Poa.

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2. **It Eliminates Spring Feeding!** The grass "greens up" early without over-succulent growth. Since 1932 the first calendar year feeding at Milwaukee Country Club is the second week in June — with Milorganite, naturally.
3. **It's a Work Saver!** No more worries about wet Spring seasons and lack of Spring labor. November through January applications are made on dormant turf with no golfer interference and when the work load is light.
4. **Delivery is Prompt With Nitrogen at its Highest!** October through December are slow shipping months. Thus, rail cars and trucks can deliver promptly. The same months find production of Milorganite with nitrogen at its highest. It is not unusual to get a half percent nitrogen bonus over the guarantee of six per cent.
5. **Storage is no problem!** Unlike chemicals and some synthetic organics, Milorganite is non-leachable. Its weight and adherence qualities also make it stay in place even on severe slopes. Store your spring fertilizer on the ground.
6. **Earlier greening than with spring chemical application!** Plot work in Minnesota proves this. In one series of tests conventional applications of other nitrogen fertilizers failed to catch up with early winter applied Milorganite throughout the entire growing season!
7. **It will not increase snowmold!** In plot work, we have purposely applied the excessive rate of 200 lbs. per 1,000 sq. ft. with no snowmold observed. Putting greens **should** be protected with the fungicide applied dry using Milorganite at 30 to 50 lbs. per 1,000 sq. ft. as the carrier. This has been standard practice for many years in the north country.

### **CAUTION**

The above statements apply only to  
Milorganite. Other materials may produce  
excessive early growth or induce unwanted  
growth during winter thaws.



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# MGCSA MEMBERSHIP REPORT

AUGUST 30, 1993

## NEW MEMBERS—AUGUST 30, 1993

Mike Kelly	Glenn Rehbein Companies	Class	F
Chris Montague	Lafayette Club		BII
Robert Gans	Wapicada Golf Club		D
Daniel Hill	Lone Pine Golf		BII
Mark Storby	Hazeltine National		C
Theresa Vyskocil	Hazeltine National		C
Sherwood Anderson	Hawley Golf & C.C.		BII
Brian Nettz	Interlachen C.C.		C
Mathew Rostal	Interlachen C.C.		C

## RECLASSIFICATIONS—AUGUST 30, 1993

Brian Lein	Little Six, Inc.	B to E
Raymond Amundson	Frederic C.C.	B to A
Charles Miller	Manitou Ridge G.C.	C to D
Kyle Benson	Bent Creek G.C.	C to BII

*John Granholt, Membership Chairman*

## Turf Conference Agenda—

*(Continued from Page 16)*

### Friday, November 19, 1993

- 7:00 a.m. - 8:30 a.m. Industrial Relations Meeting
- 8:00 a.m. - 9:00 a.m. Registration
- 8:30 a.m. - 11:00 a.m. USGA Program  
 Jim Snow  
 Bob Vavrick  
 Jim Latham
- 11:00 a.m.-11:30 a.m. Physically Limited Golfers  
 Jim Listerud
- 11:30 a.m.-12:30 p.m. Lunch  
 Choose from numerous area restaurants, all within walking distance by skyway or on-site cafeteria.
- 12:00 p.m. Past President's Luncheon
- 12:30 p.m. - 1:30 p.m. Facility Evaluation  
 Janet Altmann, OSHA
- 1:30 p.m. - 2:30 p.m. The Anatomy of a Golf Course  
 Tom Doak, Author
- 2:30 p.m. - 3:00 p.m. Thinking Superintendents Management Skills gained through hosting a tournament  
 Tom Fischer  
 Jim Gardner  
 John Katterheinrich



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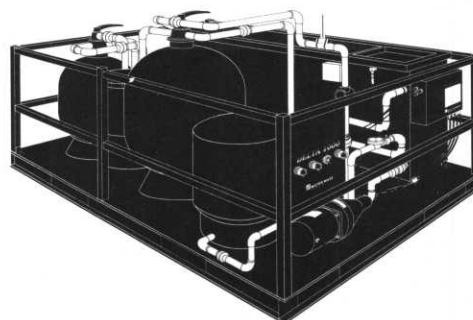
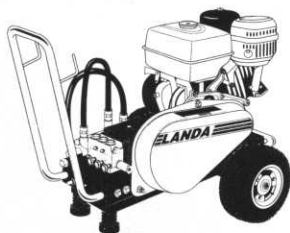
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# Handling Pesticides Responsibly —

(Continued from Page 8)

## Pesticide Handling Precautions

Make safety part of your regular routine. Train your employees to follow safety practices. Don't let new hires handle pesticides until you are sure they understand and will follow correct procedures.

The following are some special precautions you should consider making part of the routine procedure.

- What you wear to handle pesticides should be used for this purpose only.
- If your clothing becomes contaminated, change immediately. Don't wait until you've finished the job.
- Always wear neoprene gloves when you handle and rinse contaminated clothing.
- Wash clothing and protective equipment daily. Always wear clean clothes each day.
- Empty all pockets of any pesticide granules outside.
- Keep contaminated clothing in containers separate from all other laundry and always wash contaminated clothing separately.
- Test gloves for leaks by filling them with water and gently squeezing. If you find leaks, get a new pair of gloves.

## Taking Care of Spills

Despite the best precautions, accidents do happen. Make sure your employees understand how to handle a pesticide emergency. Post lists of emergency procedures in easy-to-find locations. Keep a copy of procedures in all trucks.

The first thing to do in a pesticide emergency is don't panic. Call the local fire department and state pesticide authorities immediately. Seek first aid for anyone injured. Try to contain spills by using a chemical spill absorbent. Keep people away from the area.

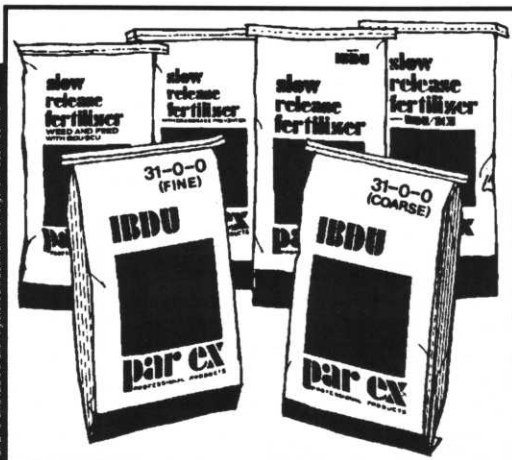
Chemtrec (Chemical Transportation Emergency Center) has a toll-free number (800-424-9300) that you can call day or night for help in chemical emergencies involving spills, leaks, fires or explosions.

The responsibility you and your employees show helping to prevent accidents and handling any problems that do arise will have a direct effect on how you are perceived in the community. A well-prepared staff will reflect well on you and the pesticide application industry.

—Technical Credit: DowElanco

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# Soil —

(Continued from Page 7)

stance, causes tetanus, while another, *Clostridium botulinum*, causes botulism. Soil fungi have given us penicillin. Actinomycetes, which are responsible for the sweet, toasty aroma of freshly turned earth, provide such useful antibiotics as streptomycin.

But the teeming life of the soil has far more powerful significance than disease or medicine. For it is the bacteria and fungi in the soil that break down the complex molecules of dead organic matter, the cellulose and lignin of wood and leaf, into molecules which plants can use for food. Only the microbes can take the salts out of soil minerals and make them available to plants. Only bacteria can oxidize ammonia into nitrite.

**There are other soil creatures** with which we are more familiar. Moles and earthworms, burrowing crickets and insect larvae all tunnel through the soil, moving vast amounts of dirt, rearranging it, compacting it here and opening up air and water passages there. Their digging continually changes the habitat for microbes. One day there may be billions of one kind of bacteria, and the next day they may be replaced by an entirely different species. Waterlogging may choke out those which depend on air and favor those which thrive without it. There may be thousands of species lying dormant, waiting for the right conditions. Thus, an activity like plowing can cause the number of organisms to proliferate thirtyfold in a few days.

There is an enormous commerce in chemicals going on in the ground. Microbes and fungi make nutrients available to plants and cause them to wilt and die. Some use up essential minerals and thus retard plant growth. Other microbes boost plant growth by liberating more nitrogen or phosphorus or potassium. And there are bacteria which provide plants with growth hormones.

Soil microbes also dispose of sewage and some kinds of trash. In laboratories, we see that the right sequence of bacteria can break down oil. And studies in the field have shown that some soil microbes can consume up to 99 percent of the DDT sprayed on them within a few weeks. But it doesn't always work. Other soil microbes will refuse to "digest" a pesticide as adamantly as a child may refuse to eat spinach. And too often toxic chemicals get into groundwater before any bacteria can get to them.

**Healthy soil has millions of possibilities:** decomposers, benefactors, curatives, tiny chemical factories. But so complex and minute is the life of soil, and so remote are its inhabitants from our eyes, that we do not think of it as a living world. Rather, we think of it as a manufactured commodity. Plow it right, water it right, add a little nitrogen here and a little phosphorus there, and, we think, things will grow.

Unfortunately, we are finding out that it doesn't always work that way. Much of our technology turns out to be bad for soil. When we take away the vegetative cover by using a plow, we leave the soil open to the forces of wind and rain.

We are now losing topsoil at a rate of about six billion tons a year in the United States, and more worldwide. The

causes are varied. Too many farmers plow up and down hillsides, leaving furrows that turn into gullies when it rains. Too many speculators are plowing up dry lands or steep lands that should not be farmed. Too many farmers are abandoning traditional crop rotations that once rebuilt overworked soils. Too many developers are careless with bulldozers.

The consequences of such actions could be enormous in the years ahead. Ours is already a hungry world. If, as the experts believe, one-third of the Earth's cropland is eroding faster than nature can replace the soil, we are losing productivity. We may cultivate the same number of acres, but as the soil gets thinner, we will harvest less food from it. And we will see more streams silting, more fish species vanishing, more sediment filling our lakes.

If we are to turn things around, we are going to have to make some choices. And to make these choices, we will have to understand that soil is not a commodity, but a habitat. And we are going to have to conserve it much the way we go about conserving other habitats—by thinking of it as part of the immense and complex variety of life.

—Peter Steinhart, writing in *National Wildlife*

## Kientzle, Grand View Team To Play in Olds Scramble in Florida

A five-player team including Tom Kientzle, head golf course superintendent at Grand View Lodge, will represent this Gull Lake resort in the national Oldsmobile Scramble at Disney World in Orlando, Fla. in September.

Other team members are head professional Kevin Cashman, clinic leader Steve Stoxen, part-owner Fred Boos and his daughter, Carolyn Boos.

The Grand View team initially won its local tournament in July, then won a chip-off at the Oldsmobile sectionals in Fargo, N.D.

Thirty-two teams participated in the sectional competition at Oxbow Country Club on August 10. After finishing 18-under par for the 18-hole tourney with a team from Staples for low net honors, Grand View won the chip-off for the right to go to Disney World. In the playoff, the best three shots of the five players determined the winning team. Grand View won by four feet.

"What made the victory most enjoyable was the fact every player on our team contributed important shots," said Kientzle. "I had a good feeling that we would do well before the tournament, and we did. It really was a team victory, and the first time a team from this area has qualified for the national Olds tournament."

At Orlando, Grand View will play 18 holes at three different courses. Should its 54-hole score rank among the top 20, it will be joined by a PGA touring pro for the national finals on October 3.