the same clientele as Edelweiss Chalet.

"I've got the greens committee spending $8,000 this season on our fairways, so I expect to see a big improvement," Bentel concludes.

Chuck Colton says that Belle Terre Country Club in Laplace, La., about 20 miles east of New Orleans got more play than ever last year—by design. The club is actively seeking more public play during the week, so it lowered its green fees. Also, the area had less rain (about 50 inches) than in the two previous years (about 100 inches each year), allowing people to get onto the course more often.

Like other courses in his area of the country, Colton is overseeding bermudagrass with *Poa trivialis*, "because the seeds are so small compared to ryegrass. And once it comes up, you can mow it a bit shorter, and it lays down better, allowing less resistance to the ball."

Jack O'Donnell is in the process of upgrading venerable Tory Pines Resort in Francestown, N.H.

"Since we bought it (five years ago), we've put in five new greens and a new irrigation system," O'Donnell says. "This year we will take out two old holes and put in two new ones. Instead of buying a greensmower, we buy construction equipment," he jokes.

The biggest change since he became involved with course maintenance, O'Donnell observes, is that "I'm spending less and less time on the golf course. Now, it's more of a business with more responsibilities like budgeting and regulations. Plus, we deal with other things on the property."

Ron Mahaffey of Ventana Canyon Golf & Racquet Club in Tucson, Ariz. is embarking on an ambitious program to improve the club's two courses—Canyon Course and Mountain Course. Crews there have expanded seeded areas to include banked areas around greens, making the holes nicer looking, with larger landing areas.

"Our biggest challenge was that we rebuilt two greens and resurfaced eight others on the Mountain Course," Mahaffey observes. "And this summer we're going to regrass 18 more greens."

Mahaffey is battling *Poa annua* with ProGrass and getting nice results. "If you can stop the poa from seeding on the fairways, it makes it easier to keep your greens poa-free, too," he says. "You don't have people tracking seed onto them."

Kurt Kammann of The Country Club Inc. says his is one of just a few courses in Tennessee that didn't suffer much winter kill last season. Some courses lost 50-80% of their bermudagrass, he says: "We had a lot of cold weather in Morristown, but there wasn't much snow coverage."

Kammann thinks that players are after high stimpmeter ratings on greens, and The Country Club is known for its fast greens. But he's more interested in providing true putting surfaces. "You try to get the greens to where everybody likes them, but that's one of the hardest things to do," he notes.

Sean O'Brian of Alta Sierra Golf and Country Club in Grass Valley, Calif., also had problems with the weather. At his club, which is located one hour west of Lake Tahoe, they had 15½ inches of rain in 15 days in January.

"This has been a much wetter winter than we're used to," O'Brian notes. "We hadn't been able to mow the fairways for close to a month." January 19th was the first day they allowed play in that 15-day period.

Because the course contains a lot of *Poa annua* in the fairways and was hit hard by anthracnose, the crews finally drill-seeded a ryegrass blend and aerified the fairways. But the budget is tight, and "one pass with a drill seeder isn't going to solve all of the problems."

—Jerry Roche, Ron Hall

'Enticing and challenging'

That's what it's like in California, on the cutting edge of environmental and legislative issues.

■ David A. Bergstrom, superintendent at two high-profile California golf courses, says his colleagues must continue to get "picky" on little maintenance details like edging on bunkers and cart paths, and sprucing up plant beds.

"Though my staff and I appreicate compliments, it's the suggestions—especially those about how we can improve—that matter most," Bergstrom says.

He oversees maintenance of the TPC Stadium Course and the Jack Nicklaus Resort Course at PGA West in La Quinta, Calif. In December, the Nicklaus course was site of the John Deere Team Championship Tournament (at which 30 other superintendents got an "up close and personal" look at the course) and the Wendy's Three Tour Challenge and Diners Club Matches (with live television coverage of both).

David Bergstrom is using IPM techniques to adjust practices to avoid problems on the course.

"TV coverage allows us to showcase the course to the general public and to thousands of potential players," says Bergstrom. "People watch the pros play a hole and want to see how well they can play it. The course has to look both enticing and challenging.

"All golf courses are under scrutiny these days, and California is on the cutting edge of environmental and legislative issues. Our regulations are the toughest in the country, and probably the forecast of things to come for other states."

During the seven years Bergstrom been with the two courses, restrictions on water and chemical use have become more stringent, and paperwork requirements have increased enormously.

"Our well system is tapped into underground aquifers and we have access to a canal system that draws water from the Colorado River," he notes. "Because the water district has expressed concern about the aquifer recharge rate here in the lower end of the valley, we're decreasing our well

continued on page 40G

Managing *Poa annua* easier

Significant advances in managing out *Poa annua* in golf course turf have been made in recent years.

by Norman Hummel, Ph.D.

■ Whether you're trying to manage or eliminate it, annual bluegrass (*Poa annua*) should be dealt with in the spring.

Poa is a prolific pest infesting golf courses, lawns and most mown turf areas. In recent years, many techniques have been developed to manage both for and against poa.

Those who prefer to live with it know its spring seed production is most objectionable. On golf courses, the abundance of seedheads detracts from the appearance, and may affect playability as well. Seedheads can be suppressed by using materials that regulate plant growth.

One of the most commonly-used products is Embark (mefluidide). On golf courses, it is recommended for fairways only. Properly timed, low rates of Embark will suppress the formation of poa seedheads.

Embark should be applied at labeled rates (for seedhead suppression) to actively growing turf, but before seedhead emergence. Examine poa sheaths on a regular basis for the presence of developing seedheads to ensure proper timing. Use a spray marker to avoid spray overlap or skips.

On greens, the wetting agent Aqua-Gro can be used for suppressing seedheads. Studies at Cornell several years ago found Aqua-Gro applied at 4 oz./1000 sq. ft. in 10 gallon of water resulted in a 65-70 percent reduction in seedheads. Apply Aqua-Gro about 10 days before seedhead emergence, repeating again two weeks later.

Some significant advances in managing out *Poa annua* in golf course turf have been made in recent years:

1) Using growth regulators can accelerate these conversions. Growth regulators that suppress *Poa annua* to a greater extent than a desirable grass (like bentgrass) will eventually result in the desirable grass predominating.

2) We also know that merely switching to lightweight mowers and removing clippings can effectively convert to more desirable grasses.

One growth regulator that can be applied in the spring is paclobutrazol (Scotts TGR). Applications should be made to actively-growing turf, but before seedheads emerge. Cornell studies indicate the lower label application rate may be best for spring application on greens to minimize discoloration.

If you have less than 30 percent desirable grasses in your fairways, consider a total renovation program, followed by TGR applications to keep the poa out.

A spring insect problem exclusive to *Poa annua* is the hyperodes or annual bluegrass weevil. Adult weevils overwinter in leaf debris and emerge in April and May to feed, mate and lay their eggs. Young, legless larvae feed within annual bluegrass stems through May and June.

Hummel: If you have less than 30 percent desirable grasses in your fairways, consider total renovation.

Hyperodes weevil is best controlled when in the adult stage; that is, late April or May. One recommendation is to apply an insecticide when the flowering dogwood is in full bloom. Materials recommended (at least in New York state) include Dursban and Oftanol.

—The author is in the Department of Floriculture and Ornamental Horticulture at Cornell University, Ithaca, N.Y. This article originally appeared in the "Cornell University Turfgrass Times"

BERGSTROM *from page 22G*

water use and increasing the percentage of water drawn from the canal. This requires more testing to ensure that we balance maintenance procedures to compensate for the higher salt levels in the canal water."

Many of the chemicals available in California seven years ago have been taken away, and others are in jeopardy, Bergstrom says. "We've always practiced IPM, and now are doing more to adjust practices to avoid problems, and to use natural and biological controls when treatments are needed. I think chemical restrictions will tighten even more in the future."

By law, Bergstrom holds weekly 'tailgate safety meetings' that focus on a specific issue, or open up the floor to suggestions.

By law, Bergstrom holds weekly "tailgate safety meetings" that focus on a specific issue, or open up the floor to suggestions. It's also essential, Bergstrom says, to document everything.

"We keep an on-site file for each maintenance employee, including pesticide applicator training, weekly safety training sessions, and equipment training. These files verify the employee's training in specific areas, record our complaince with government regulations, and support the company's position if liability becomes an issue."

Most of Bergstrom's crew members have been on board for five or six years. He feels comfortable that "they've been 'through the hoops' before, they need less supervision, and they understand the demands of Mother Nature and special events can make on the work load.

Recent improvements:

- All supervisors, the office, pro shop and club manager all have two-way radios.
- An agronomist, VIrgil Robinson, has joined the staff.
- Full computerization of Bergstrom's department is to come in 1995.

"We're excited about the progress we're making," Bergstrom says. "As individuals and as an inudstry, we have to keep moving ahead."

—Steve Trusty