

# Special Report: Golf's green teams

Precious few golf courses just say no to chemicals

[Joey Terrill](#)





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I'd never really thought about a golf course being chemically dependent, until I played one that wasn't.

Not that appearances made the difference. Quite the contrary. When I played Applewood Golf Course in Golden, Colo. -- the granddaddy of so-called "organic" golf courses -- in September, it looked and played like any other golf course. Its bluegrass fairways were tightly mowed and provided decent lies, its bent-grass greens were firm, swift and pure to putt. Sure, there were some patches of clover along the edges of a few fairways, and the far rough beyond the reach of irrigation was brown and clumpy. But Applewood cost me just \$23 to play that weekday morning. At that price, it would have been foolish to expect country-club perfection.

I knew going in that Applewood was a chemical-free golf course. But after my round, I wasn't so sure it was still on the program. I had expected to see bugs hopping around unrestrained, splotches of dead grass ravaged by disease and fields of dandelions. Instead, I saw a regular golf course with turfgrass that shouldn't look that good without artificial stimulants.

So I got in touch with Applewood's superintendent, Matt Rusch, who laughed

when I asked him if he still maintained the course without any pesticides, herbicides or fungicides.

"That's exactly the kind of feedback I like to hear," he said. "Come check my shed -- I don't even own a spray rig."

Applewood is a pleasant little public course, par 71, not even 6,000 yards from its back tees, and playing even shorter at its mile-high altitude. It sits on rather bland terrain on the northeast edge of Golden, the clubhouse and a few holes atop a plateau, the remainder of the course in a floodplain dotted by cottonwoods. The Rockies loom to the west, but only a couple of holes play toward them. It was built in 1961 for Adolph Coors Co. brewery, atop an aquifer that Coors (now MillerCoors) still uses to provide water for its beverages. In 1988, the company decided to quit running the risk of contaminating the aquifer and ordered its golf-course personnel to figure out a way to maintain the course without chemicals. They did, and Applewood became the example for "holistic golf-course maintenance."

Rusch, now 27, had no idea of the radical ongoing program at Applewood until the day he interviewed for the job in 2005. It was a program that had been in place since he was 8 years old; if he wanted the job, he'd have to abandon his "spray-every-other-week" training and learn a new culture.

He figured he was up to the challenge, and now, completing his third season at Applewood, he's proud and enthusiastic about his golf course and honest about its limitations. He fights bugs, weeds and disease without chemicals but does feed his turfgrass some fertilizers.

"We're a chemical-free golf course, not an organic golf course," he says. "Being organic means using absolutely nothing but organic fertilizers.

All the fertilizers I use have to be approved by the Coors Water Board. About 8

percent of those fertilizers are organic, but we do occasionally use a commercial quick-release nitrogen fertilizer, ammonium sulfate, with Coors' approval. It's granular, applied with spreaders, and it's taken up by the plant so quickly that there's no time for it to get past the root zone into the groundwater."

There's a debate on what constitutes a truly organic golf course. The Center for Resource Management in Salt Lake City, the organization that has coordinated various Golf & the Environment summits since 1995, has a subcommittee of environmentalists and golfers trying to define the term. After two years of meetings, a consensus has yet to be reached.

If "organic golf" means not a single drop of chemical ever touches a leaf blade, then the only true organic golf course in the United States is likely the Vineyard Golf Club, on Martha's Vineyard, Mass., whose stringent program successfully carried out by [superintendent Jeff Carlson has been well-documented in this magazine \(May 2008\)](#).

I recently came upon another truly organic golf course just across the Canadian border, in Grand Forks, British Columbia. The year-old Granby River Golf Course advertises itself as "Proudly Organically Controlled," and its owner-superintendent, Philippe Thevenaz, is passionate about being environmentally responsible. He's a man with a mission.

Thevenaz (pronounced tev-en-aw), 58, was in the wine business in his native Switzerland during the 1970s and '80s. His vineyards were organically managed, because any trace of chemicals in grapes makes it difficult to control fermentation.

Thevenaz and his wife, Joyce, moved to British Columbia in 1990, where he built log homes, and they raised 190 head of cattle on an "organic ranch" set in a lovely river valley ringed by mountains. A few years back, the couple formed

a corporation, sold stock and converted their ranch into Granby River Golf Course. Pledging to operate it without chemicals made it much easier for Thevenaz to obtain governmental permits.

Like Applewood, Granby River has bluegrass fairways and bent-grass greens. Tees and greens are cut a little higher than at Applewood, but the turf is lush and sparkling green, juxtaposed against large areas of tall, tan native grasses, conditions certainly suitable to its green fee (\$40 Canadian). Again, it's hard to believe a golf course can look and play this good using homemade remedies and witches' brews. But it's true.

"We haven't used an ounce of any pesticide, herbicide or fungicide," Thevenaz says. "We fertilize fairways using composted turkey manure. We fertilize our greens with a compost tea that's a blend of bone meal, blood meal, kelp and humate, a refined carbon to encourage root growth. We brew the tea, supplied from a firm in New Brunswick, for 24 hours, then mix in the organics and apply it in liquid form.

"To fight disease on the greens, we apply a solution of garlic extract. It's not that expensive, about the same price per gallon as a pesticide. To fight grub worms, we apply rock glacial dust. It's abrasive; the worms choke on it."

One of the great myths of organic golf is that it works only in niche areas, at high altitudes where insects, weeds and disease are less common. Applewood is indeed a mile high, and Rusch admits that ants burrowing into green collars are his main pest problem. But Granby River is just 1,700 feet above sea level, and the Vineyard sits on an island in the Atlantic.

"Climate is helpful, but it's not as big a factor as one might think," says Carlson. "In the six years I've been doing this at Vineyard, commercial suppliers have been making great strides in producing organic solutions for fungus, disease and insect control."

Based on these courses, my conclusion (admittedly not scientifically based) is that it doesn't matter where the course is located. (OK, pure organics might never work in hot, humid, Florida. But the recent introduction of brine-tolerant paspalum turf has certainly reduced some chemical applications.)



applewood

What matters is who is in charge. To reduce dependency on chemical applications, to become mostly chemical-free or to go entirely into pure organics takes a special superintendent, one who is imaginative, open-minded and willing to experiment. And it takes a supporting group of tolerant golfers (customers or club members) willing to accept a few weeds, a few brown spots and conditions that change with the seasons.

What makes their programs work is that Rusch, Thevenaz and Carlson are grass whisperers. They know that healthy turfgrass, like a healthy human body, has plenty of internal defense mechanisms. They know that chemicals don't necessarily trigger or beef up those mechanisms, and sometimes suppress them. These guys monitor their turf constantly, pushing and prodding it into natural, healthy states.

"Grass doesn't eat dirt," says Thevenaz. "Grass eats dead matters in the soil, microbes. So our goal is to encourage microbial exchange. Get enzymes down there. We get a lot healthier plant that way -- much more resistant and able to fight back. It's also important to practice soil analysis, to balance your pH level. If your soil is balanced, the turfgrass thrives. Then it's a walk in the park."

"I monitor greens daily," Rusch says. "I personally hand-water greens every day. You can't throw half an inch of water on the greens every night and then pump 320 rounds of golf across them every day. Compaction will occur, broadleaf weeds will move in, diseases will develop. So I'd rather keep the water off them, keep the roots driving deeper to find the water. If you're not hand-watering, you're overwatering."

"I've watched my turf adapt," says Carlson. "I really believe our grasses have adapted to diseases. It's like they build up immunity."

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So what do they do if a problem does break out? Isn't there a strong temptation to spray a quick application to nip the problem? No, they say, mainly because they have no chemicals on hand.

"If a disease hits one of my greens," Rusch says, "I'll mow it with one of my walk mowers, to keep the disease from spreading to other greens, I'll apply a little ammonium sulfate to get the grass growing aggressively, and I'll either add water or back off the water, depending upon the disease."

"Weed control is the one thing that organic management hasn't conquered," Carlson says. "If we do anything, we hand-pick them, even in the rough. Golfers just don't like weeds anywhere in their line of vision."

So that's the big trade-off with organic golf? It's much more labor-intensive. It'll drive up the cost of the game.

Not really. Rusch's maintenance budget at Applewood, including payroll, is just \$350,000 (considerably less than comparable 18-hole public courses). Granby River's is even less, \$247,000 Canadian, including equipment leases. Carlson says his Vineyard budget is in the mid-range for New England private courses, spending a little more on labor costs.

So why is it Americans can't wean our golf courses off most chemicals, particularly when it could have a positive impact on the water we drink, the air we breathe and the wallets we carry?