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Heide Hermary, above, leads the local movement toward organic turf management. Ardmore Golf Course superintendent Greg de Jong, below, leans on a pallet of all-natural fertilizer while right below, Hermany discusses turf management with Cedar Hill Golf Course superintendent Ian Smith.

## **Turfing out old standards for treating lawns**

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If there is one thing Heide Hermary loves, it's high quality, naturally grown grass.

But it's not the kind being smoked in the living rooms of Victoria or sold on the street corner outside city hall. In fact, few people on Vancouver Island use it at all.



Organic turf is Heide Hermary's passion, and the Saanich resident is on the cutting edge of a movement to change the way greenskeepers, park maintenance crews and other landscape professionals care for the grass they grow.

Currently working on her master's degree in sustainable agriculture – via correspondence from the University of Sydney – Hermary is convinced that pesticides, herbicides and chemical fertilizers are not only unnecessary but harmful to the long-term health of lawns, ball diamonds, soccer pitches and golf courses

everywhere.

When she graduates next year, Hermary will be among a handful of people in North America who specialize in organic turf management. "Using chemical and fertilizers and all kinds of pesticides is not healthy for the soil and it's not healthy for plants", she said. "If you can keep the grass and the soil healthy, you don't need all that stuff."

While chemicals can be helpful in killing pests or returning nutrients to the soil, Hermary said they are also harmful to micro-organisms that feed on organic matter and produce nitrogen.

"Plants and soil are totally interdependent," she said. "Plants are the major organisms that can capture carbon and turn it to carbohydrates, and that supports all life."

"But in order to create photosynthesis, they need proteins in their tissues, and for that they need nitrogen, which is produced by the bacteria that dwell in the soil."

A healthy, nutrient-rich soil will be far more disease resistant, reducing the need for pesticides, she said.

"When you kill these organisms, you create an ecological vacuum that allows these plant pathogens to move in." she said.

So far Hermary's message about organic turf management has generated a good deal of interest from landscape professionals.

At a recent workshop at Cedar Hill Golf Course, about 20 parks managers, golf course superintendents and school district maintenance staff turned out to hear Hermary's pitch for all-natural grass.

Last weekend she addressed a similar gathering in Burnaby and more such talks are in the works. Hermary and her husband Michael have started Gaia College, a homebased educational institute that teaches the finer points of organic grass cultivation.

Cedar Hill Golf Course superintendent Ian Smith said many golf courses are taking a "greener" approach to maintenance.

"It's a misconception that golf courses don't care." Said Smith. "I met with the superintendents of all the major golf courses on Friday and they've all adopted some sort of organic practices. The local golf courses are right on base with this."

Instead of granular chemical fertilizers, Smith and many other superintendents now feed their fairways nature's Gold, a product rich in nitrogen, phosphorous and

potassium that is made from recycled sewage and, believe it or not, it's odour free.

"Organic fertilizer had dropped my fungicide use by almost one third," Smith said, adding that the transition from chemically dependent to mostly organic will take some time.

"It's not something you can do overnight. It's a slow transition, like taking somebody off medication."



Heide Hermary surveys the health of a green at Cedar Hill Golf Course.

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Nature's Gold, which is now used by dozens of B.C. golf courses, is also a money-saver, costing \$12 a bag compared to \$40 for regular fertilizer.

Greg de Jong, superintendent at Ardmore Golf Course, agreed that the use of organic based products is on the rise.

"Golf courses today are much more aware of the issues around chemicals," he said.

"I try to minimize what I use chemically and do things a little more organically. You'll find a lot of weeds on this golf course, especially in the rough. I weed and feed in the springtime but that's about it."

When de Jong took over as superintendent five years ago, he started making the transition from traditional to natural practices.

New products such as disease-tolerant strains of grass and natural fertilizers are leading the healthier grass that can fight off pathogens without artificial help, he said. "It's all about catching it before it happens and attacking the problem before it takes hold," he said.

## Organic lawn-care facts and tips:

- It's not the moss that causes the lawn to be sparse, it's the sparse lawn that invites the moss.
- Overseeding is always necessary after Dethatching and on golf course greens where bare soil is exposed.
- Substances that have an indirect impact on plant health – such as enhancing plant metabolisms, enhancing nutrient uptake and availability – include humic acids, kelp and seaweed, yucca, hormones, amino acids, vitamins.
- One teaspoon of prairie soil contains between 100 million and 1 billion bacteria, several thousand flagellates and amoeba, 100 to several hundred ciliates and dozens or hundreds of nematodes.
- When exposed to water, ammonium sulfate fertilizer (21-0-0) produces sulfuric acid, which is extremely acidic and kills organisms. The same is true of ammonium nitrate (34-0-0)
- In the last decade, the number of pesticide resistant weed species increased from 48 – 2780, resistant fungus species from 100 to 150 and resistant insect species to more than

But he said most golf courses will always need some man-made chemicals.

‘I still have to spray the English daisies in the fairways,’ he said. ‘It’s such a dominant species...it’s just too hard for the golfers to find their balls.’

Golf courses, said Hermary, face the biggest obstacles to going organic, especially on the greens, where the grass is cut so short it weakens the roots, and where sandy soil is far from an ideal turf-growing medium.

‘For golf courses it’s very difficult,’ Hermary said. ‘Greens in particular are the most artificial environment. They are totally plant-unfriendly.’

To reduce compaction caused by heavy foot traffic, most golf course greens are made of sand, which contains precious little organic matter and doesn’t hold water or nutrients.

Josh Craig, co-ordinator of the pest free naturally program at City Green, said that mentality of the golfing public is a huge barrier to increasing the use of organic turf-care methods.

‘It’s been recognized for a couple of decades that golf courses use pesticides intensively to maintain the appearance and playability golfers have become accustomed to. They all want it to look like the PGA,’ Craig said.

‘But it’s perfectly possible to maintain a golf course to highly playable standards without the use of chemicals that damage the soil. The demand has been in the golf industry for several years.’

Nearby Saltspring Island is the home of Canada’s only completely organic golf course, Blackburn Meadow. However, the woman who built the course, Delia von Schilling, has moved into private consulting in the field of organic turf management.

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- Effective microorganisms are a mixed microbial culture of selected species such as lactic acid bacteria, yeast, photosynthetic bacteria, and Actinomycetes, including over 80 species from 10 genera and five families. When applied to soil, these micro-organisms function co-operatively to exert beneficial effects on soil quality.

Even if golf courses can't go totally organic, there are still many easy-to-apply techniques.

"You can put microbes (micro-organisms) in the water. You can topdress with different elements, and there's organic fungicide being developed," Hermary said.

"And it's really important to leave the clippings on the grass. I can't say that enough."

The Victoria Golf Club and Cordova Bay Golf Club did not respond to interview requests for this story.