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Course of Study

Siena College and Schuyler Meadows GC will coop-

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15,000 and Counting!

GCN and the NGF have identified the nation's 15,000th



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Top dressing breakthrough: Crumb rubber

By MARK LESLIE

WILMINGTON, Ohio - After five years of extensive study, Michigan State University (MSU) researchers are recommending crumb rubber, or finely chopped automobile tires, as a top dressing for high-traffic areas on golf courses and athletic fields.

"As much as we incorporated it into the soil profile, we never saw the panacea that people wanted. But we did find great results when top dressing it onto established turf," Dr. John "Trey" Rogers III of MSU said of

crumb rubber. "When we incorporated it, the rub-

Continued on page 25

Claims drain funding for **UST clean-up**

By PETER BLAIS

Nebraska recently delayed the clean-up of some 6,000 contaminated underground storage tank (UST) sites because its state-controlled cleanup fund is almost out of money. This spring, cash-strapped New Mexico diverted half the \$14 million in its UST clean-up and indemnification fund to other uses. Michigan declared its fund insolvent in April and went out of business for good June 29, forcing tank owners there to seek private insurance to meet the federal mandate of \$1 million in liability coverage per incident.

State UST funds in Florida and Illinois could soon run out money, according to Dennis Rounds, Continued on page 37



NOT A CORNSTALK IN SIGHT Cooks Creek, a collaborative effort between Dr. Michael Hurdzan and touring pro John Cook, used to be a cornfield. Now it's Ashville, Ohio's newest attraction. For story, see page 27.

Taxing setback in Florida court By HAL PHILLIPS

NAPLES, Fla. - A precedent-setting battle is brewing here in South Florida where 12 Collier County golf clubs have challenged their property assessments in court.

For the moment, golf industry fortunes are flagging. Judge Ted Brousseau has upheld the municipal appraisal of Quail Creek Country Club in Naples, which argued the assessment was more than \$3 million too high.

However, the remaining 11 clubs have yet to have Continued on page 43



Peter Whurr,

woes are beginning to affect golf Ransomes America course industry firms, some of which have discarded product lines dependent on overseas manufacturing agreements. Others continue to monitor the situation closely, recognizing the possibility that plunging dollar values may render those agreements unfeasible in the long-term.

"Anybody importing from Japan any commodity is impacted by the currency situation," said John Brozek, director of industrial Product Sales at Daihatsu, which will cease production of its Hijet utility vehicle in December.

Like Daihatsu, Mitsubishi manufacturers its Mighty Mit utility vehicle in Japan, but that will soon end, confirmed Bob Hertel, industrial vehicle man-Continued on page 41

HONORING OLD The world of public-access golf marks two momentous occasions in July. New York City's Van Cortlandt Park Golf Course (above), the nation's oldest public-access course, celebrates it centenary this month. For the story on its week-long commemoration, see page 35. Meanwhile, the nation's 15,000th facility has opened for play: Poolsbrook Golf Course, a family-run daily-fee in Kirkville, N.Y. See story page 46.

Golf Vehicle Report

Ever-shrinking dollar

America's ongoing currency

posing problems

for manufacturers

By HAL PHILLIPS



Rubber as top dressing

Continued from page 1

improved some infiltration rates and some aeration. But it didn't protect the turf surface. Top dressing did, though, at layers that could be from 1/4 inch up to 3/4 inch of rubber."

The idea is that the rubber itself absorbs the shock from traffic and the soil beneath it doesn't become compacted. Also, the rubber particles are much softer edged and don't have the abrasive action of sand, Rogers said in introducing the research results at a Lofts Seed Co. field day here in June.

"We're very impressed and encouraged by this. We're very confident [about using it] on athletic fields but cautious about golf courses," he added, suggesting that for now it be applied at the end of cart paths and exits off greens. "We have tested it on high-traffic pathways and have been very pleased. It doesn't do a great job of regenerating turfgrass. It keeps turfgrass from wearing out. So you have to get the grass into good shape before you put the rubber down.

"It's not a cure-all. You still have to do everything else you normally do. But it's got some real potential. It protects the heartbeat of the course."

From studies performed by graduate student Tim Vinini, MSU researchers have settled on a recommendation that on traffic areas, if the turfgrass is mowed above 5/8 inch, use 1/2 to 3/4 inch of rubber. That amounts to 1,200 to 1,500 pounds of crumb rubber per 1,000 square feet. The cost is 14 to 20 cents per pound, the smaller size costing the higher rate.

"The smaller size works quicker, because it naturally works its way down to the bottom of the turf-soil interface. But once the larger size works its way down, we don't see any difference," Rogers said.

Regarding possible toxicity from the rubber, Rogers said: "We haven't looked at all the compounds that come off the rubber. But as far as zinc, iron, manganese and copper are concerned, we've seen some increase in zinc and manganese but not in iron and copper. Even when we tilled rubber six inches into the soil, the soil levels were well below drinking standards, even after four years."

He said he was surprised to find the rubber does not cause heat problems. "In April, when the grass is low, it warms up the soil a little quicker. Later, when the turfgrass canopy is higher, it covers up the crumb rubber."

Asked about aerating and core-cultivating the rubber into the soil, Rogers said: "I think if you had an area that you couldn't grow grass in, and you wanted to seed it, you should core-cultivate it before seeding it anyway. I would do that, but still concentrate in having the majority of the rubber at the top. Don't put the rubber down until you are almost ready to put traffic on it."

Rogers dispelled any concern that too much rubber would work its way into the soil profile over a period of time.

"We have not seen the rubber migrate down into the soil profile," he said. "Its particle density is around 1.1 — much less than the soil density, which is around 2.6."

Finally, and most important for golfers, he said, the rubber doesn't affect hitting a golf ball.

MSU is receiving a use patent on crumb rubber. The university has granted licensing rights to a company which is calling the product Rebound Top Dressing. It can be reached at telephone 800-795-TIRE. GOLF COURSE NEWS

Wood-fiber mats may answer range problems

By MARK LESLIE

WILMINGTON, Ohio — Wood-fiber mats may be a surefire medium for superintendents interested in growing sod, according to Dr. John "Trey" Rogers of Michigan State University.

Speaking at a Lofts Seed Co. field day here in June, Rogers said MSU research on four- by 50-foot Ecomat proved viable for seeding.

"You can lay this mat out, seed it and mulch it, and grow it on your property," he said. "The results are very promising so far. As long as you have the irrigation and fertility, you don't have to have a soil base for any of these wood fibers. You can do it right on a parking lot and transfer it. "Two people can pick up a sheet of this mat, even after it is

watered," he added, and "you can sod an area very quickly."

In research done to determine the minimal amount of light needed to grow grass, MSU researchers have "discovered that plant growth regulators [PGRs] did a phenomenal job under absolute lowest light conditions," Rogers added.

Done over the last 2-1/2 years in a dome with the same type of cover and floor as the Pontiac Silverdome, the research showed that PGRs proved to be a key for the best growth results.

"We've not only seen good color retention and quality, but some recovery and wear tolerance from using PGRs," Rogers said. "The growth regulator is absolutely instrumental in providing higher quality turf under these lower light conditions. PGRs slow the plant's cell elongation, which is the natural thing for a plant to do under reduced light conditions."



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