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for a low-emission engine with the power you need and a low weight that is comfortable for the user.

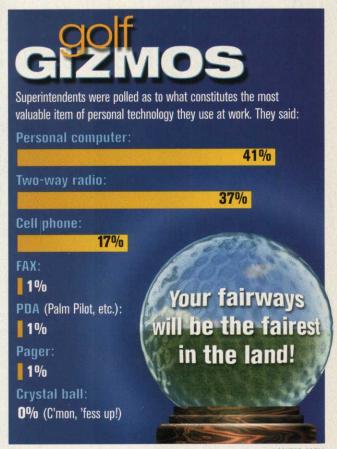
## **Ergonomic considerations**

Ergonomically advanced equipment, including many of today's hand-held chain saws, trimmers, brushcutters and blowers, fight vibration and fatigue through the use an anti-vibration system that isolates the engine from the handle.

When purchasing a string trimmer, be sure it has an anti-vibration feature. Take a close look at the handle mechanism. Can it be adjusted for the different people who use it? An adjustable loop handle can slide up or down the shaft to provide comfort for users of varying height.

Finally, always look for unique user-comfort features that can maximize productivity. For instance, look for a harness with good weight distribution on a backpack blower. Typically, a backpack blower hangs from the operator's shoulders. However, units that feature a hip pad distribute a good portion of the weight onto the operator's hips, like a true hiking backpack, which reduces some of the weight on the shoulders. That's an important benefit to the operator saddled with the weight of a two-cycle engine on a warm summer day.

The author of this story, Mark Michaels, is the business unit manager of hand-held products for Husqvarna.



SOURCE: GCSAA Illustration: Dan Beedy

## **All Spikes Not Created Equal**

## MICHIGAN STATE UNIVERSITY SURVEY SHOWS DIFFERENCES IN ALTERNATIVE PRODUCTS

By Frank H. Andorka Jr.

esearchers at Michigan State University concluded that the greenfriendliness of alternative spikes relates directly to the material used to manufacture them.

Thom Nikolai, the turfgrass education specialist at MSU who oversaw the study, said alternative spike manufacturers must find materials flexible enough to be green-friendly while still providing adequate traction.

"The 8-millimeter metal spike damaged the turf by pulling it out of the ground," Nikolai said. "If alternative spikes do the same thing, what difference does the type of spike make?"

Softspikes, the original manufac-

Flexible material is key to a green-friendly spike.

turer of alternative

spikes and maker of the Black Widow cleats, funded the 18-month study, which concluded earlier this year. Last year, the first generation of Black Widows alarmed superintendents because the damage they caused eerily resembled metal spike damage. "We wanted an independent study done that compared all the alternative spikes, including our reformulated Black Widows," said John Hyman, Softspikes CEO.

To create a standard test protocol, Nikolai and his researchers observed wear patterns on golf course greens around the country. Then they simulated the patterns on their test greens with volunteers wearing the same size shoes.

"Other people had done other studies, but there was no common platform from which to work," Hyman said. "Therefore, the results varied depending on the size of the shoe."

Nikolai's study concluded that no brand on the market perfectly marries traction with turf friendliness.

Hyman said Softspikes will involve superintendents in future design plans. To achieve that goal, Softspikes created a superintendents' advisory panel earlier this year.

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