To make a soil moisture probe, a bench-mounted grinding wheel is used to notch out a golf club shaft.

From Broken Shaft to Soil Probe

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WHAT TOOL CAN BE FOUND at nearly all golf course maintenance facilities, yet is used inconsistently by most turf managers? You guessed it — the common soil probe. Nearly every golf course maintenance facility has at least one soil probe, but often it is found hanging on a hook, gathering dust, or rusting in the back of a utility truckster. Regular use of a soil probe is the best way to accurately monitor root growth and health and to identify zones of soil compaction or layering. Although a common and basic tool of turfgrass management, the importance of the soil probe needs to be emphasized continually.

In addition to its importance in monitoring the soil and roots, a probe is essential in evaluating soil moisture. This information is vitally important in determining irrigation needs. However, a soil probe that works well for root evaluation removes a plug that, because of its large size, normally requires replacement. This makes frequent and multiple probing to check moisture a slow, time-consuming, messy, and, as a result, often neglected practice.

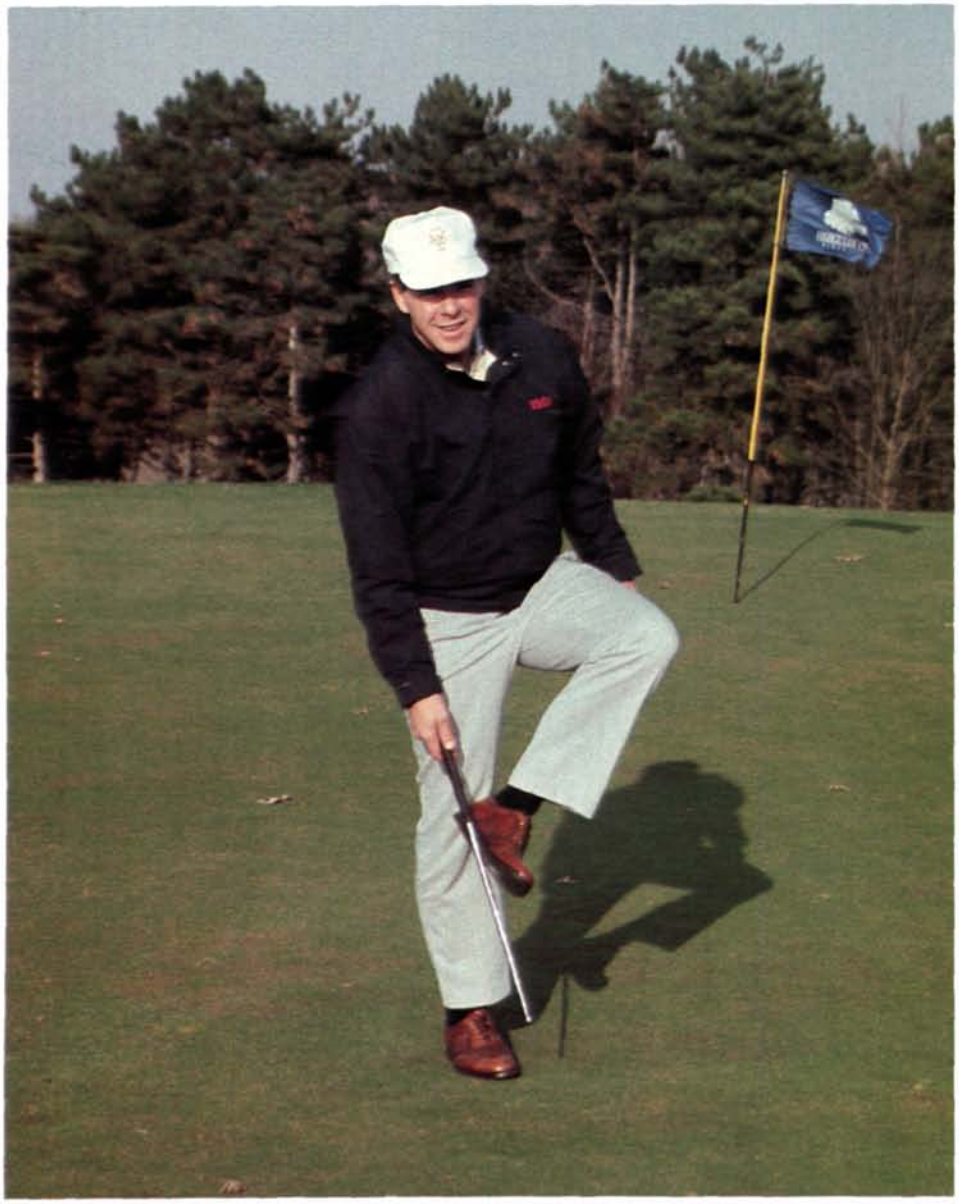
The ideal soil moisture probe would allow easy and repeated usage, with no resulting turf repair work needed (i.e., a small hole). As it turns out, every golf course superintendent has an unlimited supply of inexpensive moisture probes that meet these criteria; they are damaged or discarded golf club shafts! Hollow steel golf club shafts can be made into very good soil moisture probes with the preferred small opening. Although it's not the type of tool we've come to expect of today's high-tech world, this basic management tool has a place in our maintenance programs. What other tool do you know of that can be used daily, costs almost nothing, is effective, and even recycles something that would otherwise be discarded?

The following step-by-step procedure will allow you to turn a golf club shaft into a handy diagnostic tool in your putting green maintenance program.

1. Secure a hollow steel golf club shaft. The thicker-walled steel shafts will make a stronger probe. Although the length is not critical, longer shafts make the probe easier to use. A bent, broken, or damaged club is normally preferred (unless you have 15 clubs in your bag).

2. Using a tube cutter, cut off the head of the club and discard it. The cut should be made three to six inches from the clubhead. This produces a small-diameter end, and enough remaining shaft and grip to allow easy usage.

3. With a bench-mounted grinding wheel, notch out the end of the shaft. Begin grinding between ¼ and ⅜ inch from the end of the shaft. The initial cut with the grinding wheel should be parallel with the end cut. The slot should be ground down to about half the diameter of the shaft (grind away about half the thickness of the shaft) and



(Above) Knocking the soil probe shaft against your foot will clear out the soil plug and make further probing possible. Be careful where you aim.

(Right) Does the soil roll into a ribbon or crumble? Feeling the moisture level in the soil is the best way to determine irrigation needs.

continue toward the grip, creating a 2½- or 3-inch slot. The grip end of the slot cutout can be tapered back gradually to the full shaft diameter.

4. With a round metal file, clean out the cut end and the entire ground-out slot, removing burrs and sharp metal shavings. The new moisture probe is ready to use.

A golf club shaft soil moisture probe is easy to push into the soil without having to bend over very far, making repeated usage quick and easy. Does the soil plug form a ribbon between your fingers, or does it crumble and fall away? The more frequently the soil is checked, the better the turf manager will become at evaluating the condition of the soil in comparison with other factors, such as weather conditions, traffic volume, time of year, irrigation programming, and chemical applications. There is an art to checking soil moisture and accurately integrating the information into a well-balanced maintenance program. Practice makes perfect!

After the soil moisture is checked, the probe can be cleared quickly and easily; this is the fun part. First, elevate your foot 12 to 15 inches off the ground, maintaining your balance. Then, using a short swing with a lot of wrist action, hit the midsection of the shaft against the sole of your shoe. When this is done with the notched-out section facing toward your shoe sole and below it, the soil plug will fly out of the probe and off to the side of the green. Be careful where you aim. A cleared probe makes additional moisture checks quick, easy, and even fun. Hopefully, easy and fun will equate to more usage.

The hole that is left in the putting surface from use of a golf club shaft soil moisture probe is small and will cover over quickly. The fact that there is no need to repair the probe hole adds to the speed and ease of checking multiple locations on putting surfaces. When the probe breaks or the tip wears out, replacements can be made quickly.

The greatest agronomic pitfall in golf course maintenance, as identified by a Green Section staff survey, is overwatering. The cardinal rule is to "keep the turf as dry as possible." When programming an irrigation system, aim for the dry side; more water can always be added. Too much moisture is difficult to remove and often results in poor turf quality and playability. A soil moisture probe helps determine moisture levels, allowing for more efficient watering, healthier turf, and better playing surfaces. Take advantage of a readily available resource and go "from broken shaft to soil probe."