

Ball mark Recovery: Does the Repair Tool Matter?

Putting green surface smoothness and uniformity is often disrupted by unrepaired ballmarks. These marks can disrupt surface smoothness and increase the potential for weed (e.g. annual bluegrass) encroachment. The traditional method for repairing ballmarks normally employs a metal pronged tool (≈ 1 in or 3 cm), or tee and using a knit and twist method attempting to pull healthy turf from the perimeter into the ball mark (Figure 1). Recently, several new repair tools, such as the GreenFix Wizard (Figure 2), have been introduced with the intent of improving ball mark repair. Many of these tools utilize a simple pushing method and shorter tong lengths ($\approx 1/2$ in or 1 cm), with less potential for root disruption. The objective of our field-study was to evaluate golf ball mark recovery of two creeping bentgrass areas with contrasting surface firmness and rootzone moisture contents as affected by various ball mark repair tools. Two adjacent locations were prepared to create "firm" (20% moisture, 0-2 in) and "soft" (28% moisture, 0-2 in) study areas. Four ball mark repair tools (Traditional long-tong tool, angled long-tong tool, GreenFix Wizard, standard length wooden golf tee) plus an unrepaired ball mark were evaluated for visual appearance and ball mark recovery for several weeks after ballmarks were naturally created (Figure 2).

tong tool using the traditional method. By comparison using the angled tool and wooden golf tee were not significantly different than leaving the ball mark unrepaired.

- One of the worst performing tools in this study was the traditional wooden golf tee which was similar to an unrepaired mark on all measurement dates in the firm area and six of seven

dates in the soft area.

- For optimum recovery, use a traditional tool correctly or consider the use of one of these newer short-tong tools with a pushing method.

For more information refer to the full text of this article on our Research Summary website at <http://www.agry.purdue.edu/turf/report/2007/index.html>

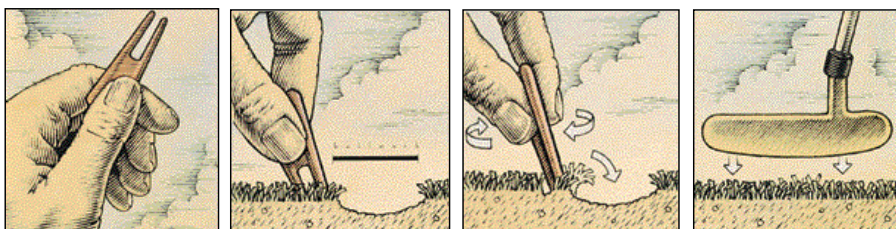


Figure 1. Standard method taught by the GCSAA which involves a knit and twist method that brings the edges together with a gentle twisting motion, while not lifting the center (GCSAA. 2008 [Online])

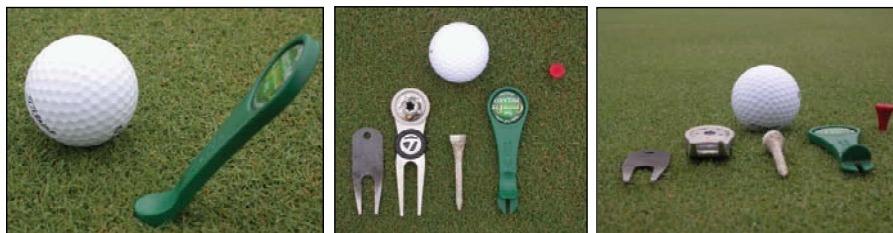


Figure 2. (A) The GreenFix Wizard employs a "just push" at 45° that reduces the chance of tearing and disrupting the root system. (B-C) (left to right) Traditional long-tong tool, angled long-tong tool, GreenFix Wizard, standard length wooden golf tee and an unrepaired ball mark were all tested in this study.

- When averaged across all dates for the soft area the GreenFix Wizard and the traditional long-tong tool had the highest ball mark rating values of 7.8 and 7.3, respectively (10=healed, 0=complete injury). The wooden golf tee and unrepaired marks performed the worst with ball mark ratings of 5.4 and 5.0 respectively.
- Ball mark scar areas were largest and most pronounced 2 days after repair (DAR) with scar areas ranging from 205 to 640 mm². The scars in the unrepaired marks in the soft area were substantially larger 640 vs. 459 mm² than those in the firm area (Figure 3).
- For both areas the lowest numerical scar area was measured for the GreenFix Wizard, which was not statistically different from the long-

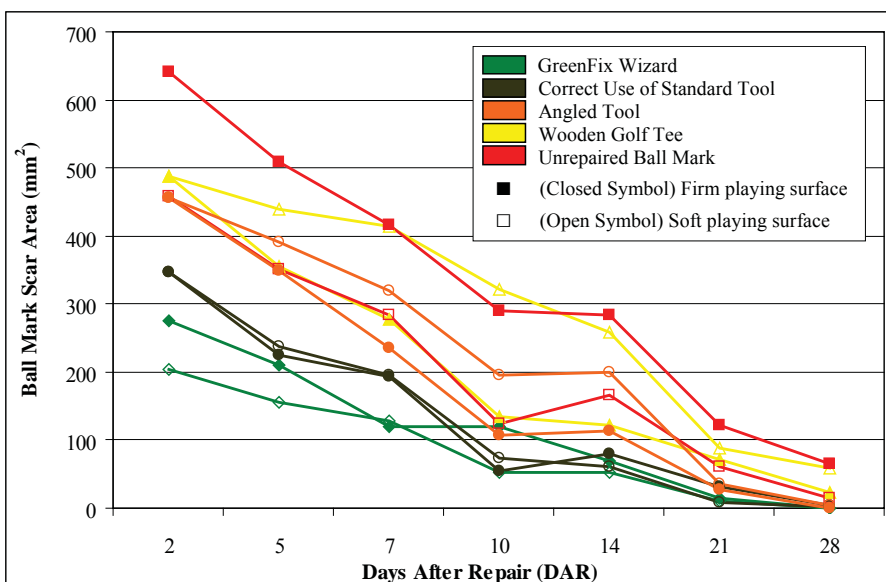


Figure 3. Ball mark scar area as affected by various repair tools on soft and firm putting green surface. The higher the damaged area, the worse ball mark.

Color Variation in Residential and Commercial Lawns

During spring green-up, home lawns may reveal many variations in color, growth rate, and leaf width. This variation can be due to some of the following reasons:

Species and cultivars:

Perennial ryegrass is always the first of the desired cool-season grasses to green-up, followed by tall fescue and eventually Kentucky bluegrass. Within a species, different cultivars may green-up faster or have inherently darker green color. Though Kentucky bluegrasses selected for sod are usually dark green, sodded lawns tend to green-up a little slower than adjacent seeded lawns. This is a typical complaint with sodded front lawns with all bluegrass green-up slower than seeded side and back lawns that contain some perennial ryegrass. Furthermore, a blend of cultivars of the same species may segregate over time as each cultivars may dominate their own niche in a lawn. For instance, shaded or damp areas may be dominated by one cultivar while sunny or dry areas may be dominated by another. When blended together, these cultivars usually cannot be distinguished from one another until time allows them to separate into visible patches. **Recommendation:** a light fertilization of 0.5 to 0.75 lbs N/1000 sq ft might help to mask color differences.

Weed species:

Warm-season grasses in cool-season grasses are the most obvious brown turf in green turf. Warm-season grasses will green-up by late spring and become less noticeable later in the summer.

Recommendation: Little can be done short of multiple glyphosate applications to control the warm-season grasses.

Annual and rough bluegrass are light green whereas more desired turf species, such as Kentucky bluegrass, are darker green. Creeping bentgrass is more bluish green than the desired Kentucky bluegrass, perennial ryegrass, or tall fescue. Annual and roughstalk bluegrass green-up in early spring,

while Kentucky bluegrass is slower to green-up. **Recommendation:** Nothing can be done until summer or fall.

Annual bluegrass can be controlled with summer drought followed by preemergence applied before labor Day. Rough bluegrass can be control by two to three applications of Certainty, though perennial ryegrass may be damaged slightly by Certainty. Multiple glyphosate applications will control creeping bentgrass.

'Kentucky 31' tall fescue, orchard grass, or winter annuals like downy brome will have wide leaf blades, a lighter color, and grow much faster than the rest of the lawn. **Recommendation:** Frequent mowing will help mask the differential growth rate. Tall fescue can be dug out, controlled selectively with Corsair or Certainty, or controlled non-selectively with one application of glyphosate. Orchardgrass can be dug out or controlled non-selectively with one application of glyphosate. Downy brome can be dug out, controlled non-selectively with one application of glyphosate, or allowed to die naturally with the summer heat.

Recently seeded areas often have a wide variety of weedy grasses that were originally on the site or more commonly, came with the straw mulch. These grasses may have germinated last fall and are growing twice as fast as the desired grasses. **Recommendation:** Frequent mowing will help mask these weeds and prevent them from maximum growth. Summer weather should help control these weeds or glyphosate applied with a wick as the weeds grow well above the turf canopy is also effective.

Identification of all of the mentioned grasses is difficult for even the seasoned professionals. More identification help is available at our turfgrass identification web page at: <http://www.agry.purdue.edu/turf/tool/index.html>



Kentucky bluegrass (far left) greening up slower than perennial ryegrass (far right)



Bluish-green creeping bentgrass in an otherwise Kentucky bluegrass lawn



Lighter-colored rough bluegrass in an otherwise turf-type tall fescue lawn.



Winter wheat out-growing the desired Kentucky bluegrass in a Fall-seeded lawn that was mulched with straw.