When We Aerify: Survey Results

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Golf course superintendents clearly understand the agronomic reasons aerification needs to be performed. These benefits include: Restructure deflocculated soils, reduce compaction, improve surface and subsurface drainage, break down thatch by increasing microbial action, reduce black layer, reduce dry spots, allow top-dressing to be incorporated into thatch and soil without layering and increasee overall health of the turf.

Last year, you may have recalled, I sent out a survey to the superintendent members of the Midwest to find out about aerification timing. The following are the results of that survey. It's unfortunate that aeration doesn't get scheduled when the time is ideal. It is often scheduled according to the golfing calendar. Aeration too early in the year makes the recovery process take longer than expected and you may end up favoring the wrong grass species. In the Chicagoland area, it's recommended to core aerify when soil temps are above 55°F, but optimal times are when temps are between 60°F and 65°F. It is recommended that aerification take place when the turf is actively growing, usually around the end of April or early May for cool season grasses such as creeping bentgrass and poa annua. Additionally, the timing of aeration can affect the species that you want to interseed. For example, if you are trying to push more creeping bentgrass into the aeration holes and inter-seed, it would be best to aerify when creeping bentgrass is actively growing (ideally when soil temperatures are in the 60°F and 65°F range). When temperatures are below 55°F, poa annua would have the best opportunity to become the predominant species.

A total of 57 responses were obtained from superintendents of public and private sector golf courses with budgets ranging from approximately $500,000 to $1.5 million annually. The following charts summarize the results on the timing of aeration and the overall objectives of the superintendents. Data is also presented comparing the difference in timing of aeration by private and public golf courses.

Aerification Scheduling- Spring

The results of the survey show, according to table 1, that among the surveyed superintendents, both private and public, about a ¼ of them don't aerify in the spring. Table 2 shows that most superintendents that do aerify in the spring perform the work in April.

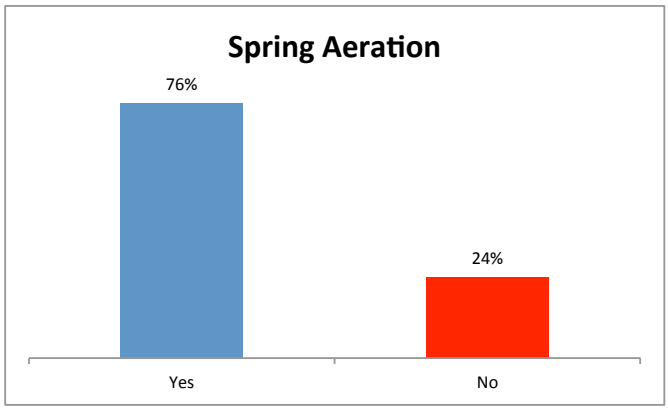

Table 1. Spring Aeration. 76% of all golf courses perform a spring aeration. April is the preferred month for aeration (58% versus 42% for May) because play is less.

It becomes apparent through the results that spring aeration is not as critical as the fall aeration to the superintendents. The overall objectives of the superintendents for the spring aeration are outlined in table 3. These results reinforce that spring aeration is important for thatch control and air/water movement. Due to the inclement weather Chicagoland's spring weather brings, most superintendents try to aerate during April when play can be minimal and recovery can often go unnoticed due to weather changes.

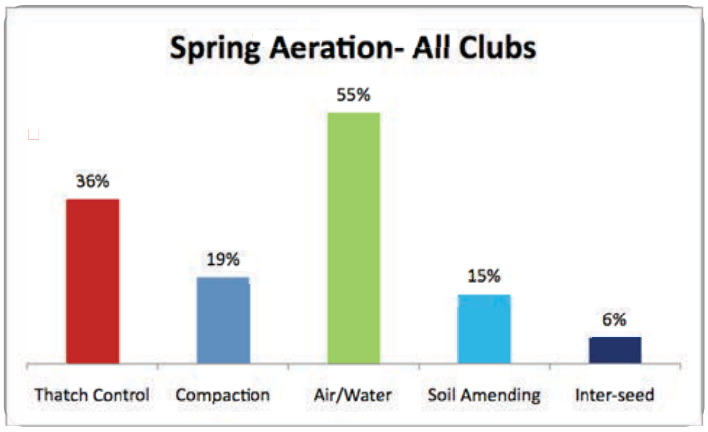

Table 3. Spring Aeration- All Clubs. The primary objectives for spring aeration in clubs that do aerate.

Aerification Scheduling- Fall

The fall aerification process is one of the most important agronomic practice scheduled on golf courses. According to the survey, 97.9% of the golf courses perform fall aeration. The timing of the fall aeration is important. The grass should still be actively growing to speed recovery. If aerification occurs too late in the season, the holes may not be completely healed going into winter. The optimal time to complete the process is September, normally right after Labor Day or within the next couple weeks. As the day lengths begin to shorten, the duration of air temperatures also begins to decline. This marks a special time as photosynthesis begins to decline as the plant begins to prepare for winter. A frost, which can occur at the end of September or early October, is generally the cue for the turfgrass plant to begin storing carbohydrates and signals root growth. At this point, growth of the turfgrass plant has declined significantly, which is a problem for many courses if aeration is scheduled too late into the fall. According to Zac Reicher, PhD from the University of Nebraska, Lincoln, "Poa annua germination peaks in September and October, but will continue to germinate throughout a warm winter and well into spring. Open holes from late aerification will encourage Poa annua germination. Additionally, bringing soil cores to the surface will also bring viable Poa seeds to the surface further encouraging germination" (Reicher, 2003). Greens should not be core aerified in fall; only solid tine aerified as coring will promote Poa annua infestation. If aeration holes are not healed over, this may encourage poa annua infestation, as this species is the first to begin growth next spring. The unrecovered holes from the previous fall provide a perfect opportunity for germination next spring.

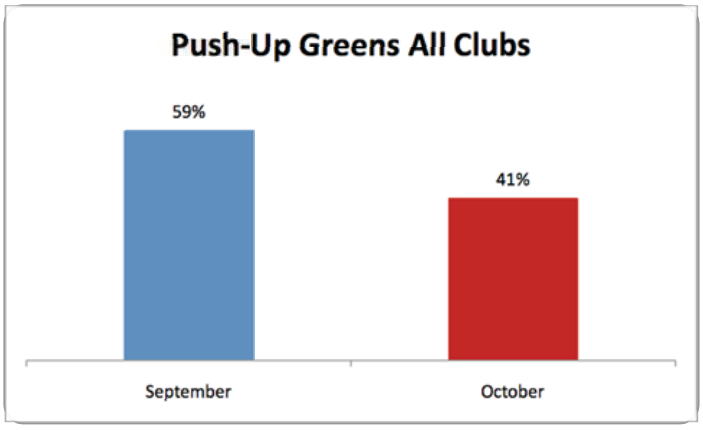

Table 5. Push-up greens all clubs. Members with push up greens typically aerify in September.

When is the Right Time to Aerify in the Fall?

Members at private country clubs often feel that their courses are the only ones that aerify in September. This is not the case. The survey cited earlier was conducted among public and private course superintendents in the Chicagoland area. The following tables classify the practices of private and public golf courses on different green types (i.e. USGA and push-up). Table 4 indicates that most courses with USGA greens will aerify in October.

The opposite is true if the course has push-up greens. Most of these courses will aerify in September which is the optimal time for healing after the summer stresses and allow for the optimal

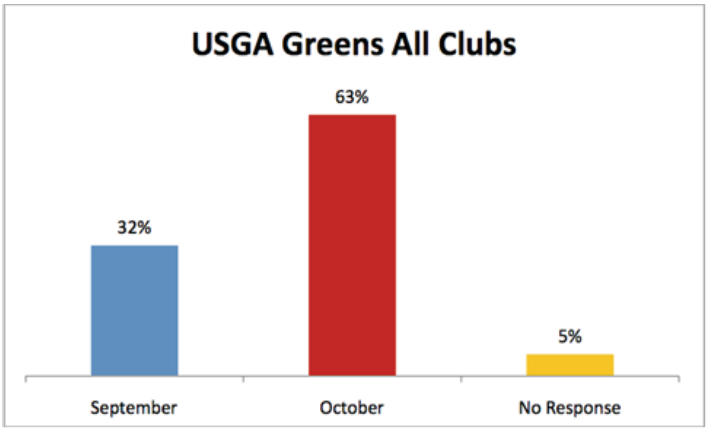

Table 4. USGA Greens All Clubs. When superintedents that have all USGA greens perform their fall aerification.

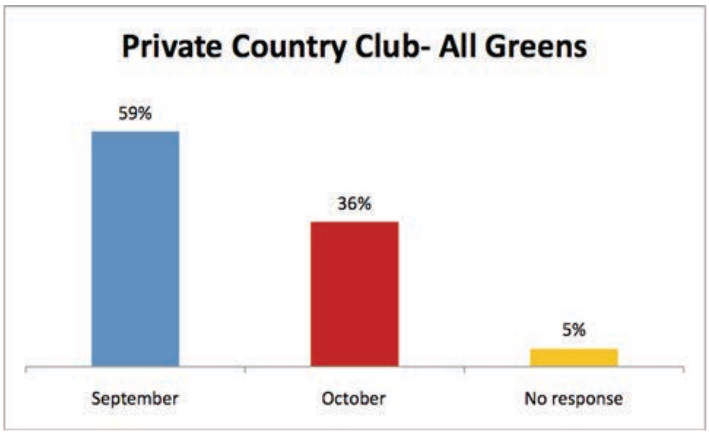

Table 6. Private Country Club- All Greens. Private country club superintendents aerify USGA or push- up greens primarly in September.

time to inter-seed and germination. Table 5 indicates that the majority of clubs, private or public, aerify in September.

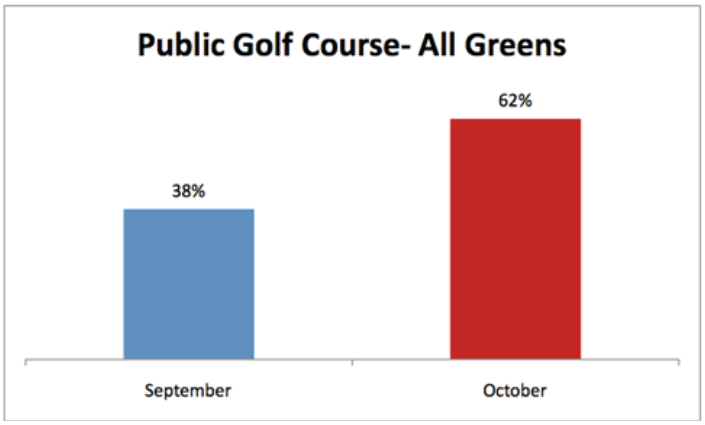

Table 7. Public Golf Course- All Greens. Public golf courses uperintendents generally aerate both USGA and push up greens in October.

The survey results also indicate a difference between private and public golf courses relative to when they aerify in the fall. As expected (Table 7), public golf courses aerify in October due to revenue pressures. Most private golf courses (Table 6) with push up greens and USGA greens aerify during September for optimal recovery and benefit to the turfgrass plant.

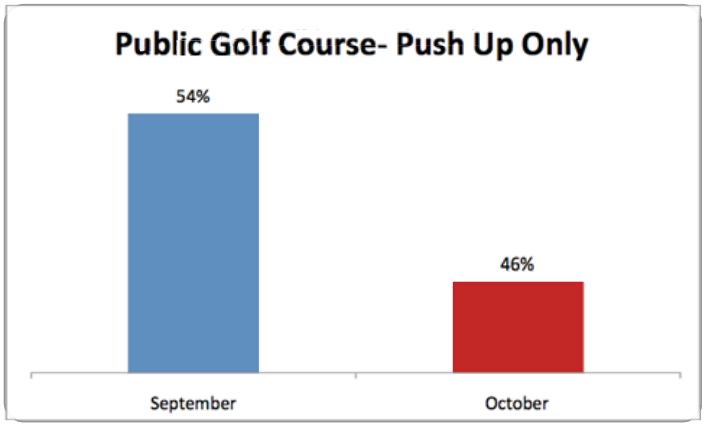

Table 8. Public Golf Course- Push Up Only. Public course superintendents with push up greens primarily aerate in September.

To further demonstrate the importance of fall aerification especially during September when the turf is actively growing the data shows that the majority of both public and private golf course with push up greens aerate in September (Tables 8 and 9).

The primary objectives for aerification of golf courses that have USGA vs. push-up greens differ dramatically. As stated earlier, USGA greens management is primarily concerned with thatch control and air/water movement as shown in Table 10. Golf courses that have push-up greens are primarily concerned with compaction. There is an increase in soil amending and inter-seeding by superintendents that have push-up greens (Table 11).

Whether you aerify your greens in the early spring or late fall or both, whether you have USGA greens or modified push up greens, we can all agree the benefit of this practice is proven.

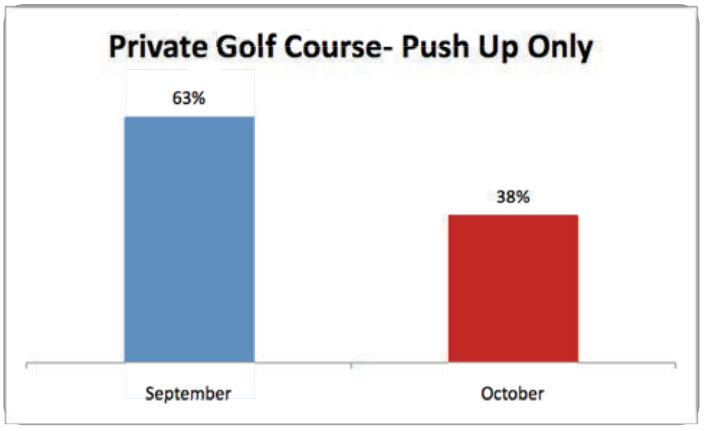

Table 9. Private Golf Course- Push Up Only. September is the optimal time to aerify push-up greens on private courses.

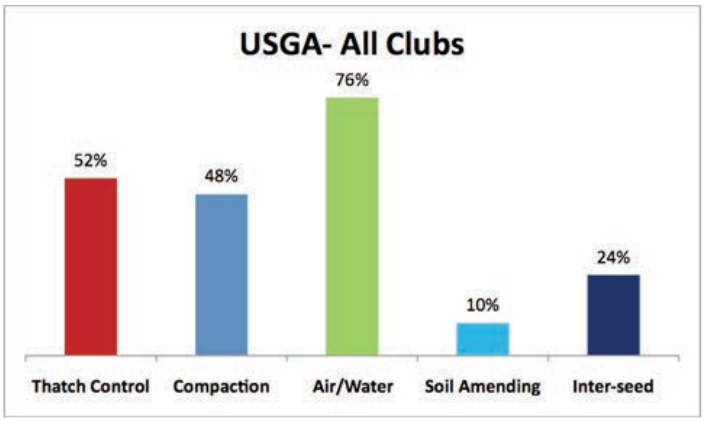

Table 10. USGA Aeration. Primary objectives of aerification from all clubs that have USGA greens.

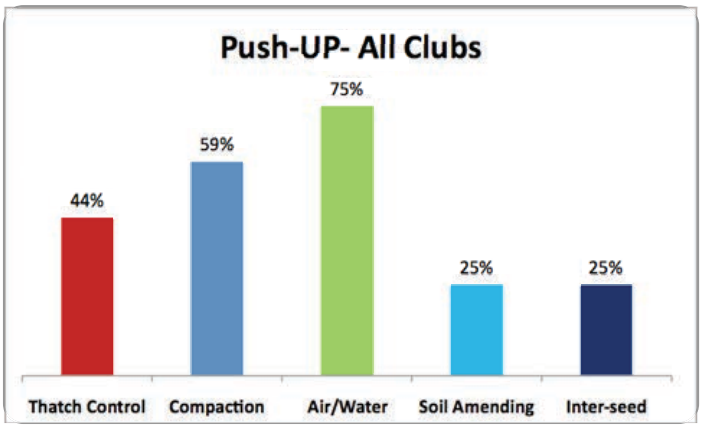

Table 11. Push Up Aeration. Primary objectives of aerification from all clubs that have Push-up greens.