TWO WHO MADE A DIFFERENCE

By Monroe S. Miller

It seems lately that everybody on the faculty in the College of Agricultural and Life Sciences at the UW-Madison is retiring. Some of us fear we'll know no one on campus before long. The real cause, I suspect, for people like me feeling downcast about faculty retirements is these events mark the end of an era that included our years on campus, years when we were happy-go-lucky college students. Retirements are reminders to those my age that we are smack in the middle of middle age.

I simply cannot believe that Professor Edward Hasselkus and Professor Marsh Finner are leaving their positions on the CALS faculty. Both men have been influential in the golf course industry during their careers.

There are similarities between the two. Both are Wisconsin natives and were raised on family farms—Marsh in western Wisconsin and Ed in southeastern Wisconsin. Both received all of their education at the UW-Madison and have spent the entirety of their academic careers at their alma mater.

They are two of the most civil, pleasant and entirely friendly men you'll ever meet in any walk of life. And in their field of study, their reputations among colleagues are sterling. I am better for having known each of them.

Common ground they shared on the Madison campus was a love of teaching, not always a plentiful commodity at a research institution like Madison. Dr. Hasselkus was one of the three best instructors I had while I was a student. He was demanding and had high expectations of his students. But his enthusiasm for landscape plants was an inspiration. I'll be forever grateful to all I learned from him. My feelings about Ed Hasselkus are shared by all I know who have been his students, which includes all the WGCSA members who are Madison alums. Thousands of students in agricultural engineering feel the same way about Marsh Finner.

These men have received prestigious awards far too numerous to note here. Suffice to say they are highly respected among their professional peers.

Hasselkus may be known by more WGCSA members than Finner; Marsh's extensive help to our industry is probably known by far too few. Let me use these lines to tell you what Kussow, Koval, Worf, Newman, Harrison, Miller and some others know about Marsh.

Since 1983 he has been the Director of the UW-Madison Agricultural Research Stations. He was a strong partner and supporter of the O.J. NOER TURFGRASS RESEARCH AND EDUCATION FACILITY. The facility has been in his charge during its entire existence and the manager works for him. His help was invaluable in getting the station up and running. His concern since then has been tremendous—keeping the manager's position filled, helping add 20 acres, constant upgrading of equipment and services, and more. And he has done it with no fanfare, only satisfaction in knowing he was helping one of Wisconsin's premier agricultural industries. We owe him a debt of gratitude.

During the reflection that naturally goes on during retirements like these, the ultimate question I ask is "did each of these men make a difference?"

The answer, for both, is a resounding YES. Their positions will be filled, but they'll never be replaced.

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Consortium to Study Drought Tolerant Grasses for Midwest

By Scott A. Mackintosh, Manager

A steady stream of new technology is constantly entering the turfgrass industry. Turgfrass managers have access to computer driven irrigation systems, weather stations that forecast disease outbreaks, computer controlled spray equipment, lightweight mowing equipment and new turfgrasses that are greener, finer-bladed and more disease resistant. This technology has been available for only 10 to 15 years; imagine what will be developed in the next ten years. If the Ohio State Turfgrass Biotechnology Consortium has its way, drought tolerant turfgrasses will become an integral part of turfgrass management soon.

The Turfgrass Biotechnology Consortium consists of 12 researchers that will try to develop drought tolerant turfgrass. The benefits of growing healthy turfgrass are numerous; at the same time, finding ways to grow healthy turfgrass with fewer inputs is essential.

An average homeowner's lawn is about 7,500 square feet which requires an inch of water or 4,500 gallons a week to maintain acceptable growth and quality. In dry regions of the country, lawns and golf courses cannot be irrigated with drinking water. In all likelihood more regions across the country will also place a premium on drinking water. Development of drought tolerant turfgrass could not come at a better time.

What has the Consortium excited is the discovery of a gene that controls proline, an amino acid associated with drought tolerance. The gene, which was isolated from an East Indian lentil plant, increases proline concentration within plant cells during drought conditions. Proline prevents water loss within the cells to keep them alive. The Ohio Turfgrass Foundation realizes the potential benefits of developing the isolated gene in turfgrass and has granted the Consortium $100,000 over two years.

In other news the Noer Facility is brimming with activity. Research data is being collected as if tomorrow's forecast called for a foot of snow. The research team at the Facility should have some interesting observations and discussion for the upcoming Field Day and for the 1995 Winter Conference.

The Facility is getting a little face lift this summer. A kiosk has been assembled in front of the building and will contain a map of research plots, current research observations and pesticide application rates, dates and reentry periods. The Facility will expand by 20 acres this fall. The new land will provide researchers an area to conduct prairie stand and athletic field research.

On August 17, 1994 I am resigning as manager of the O.J. Noer Turfgrass Research and Education Facility. My wife and I decided that it was better for our children to have family close by. The decision to resign was not easy, but we feel that it is the right decision. We can honestly say that our time spent in Wisconsin will remain near and dear to us both.

I have enjoyed meeting everyone in the turfgrass industry. The level of commitment to supporting turfgrass research in Wisconsin is remarkable. This unique support has given me valuable insight and education to the benefits of a strong research program. Lastly, I would like to thank the UW Turfgrass Faculty for their support and camaraderie. I could not have worked with a nicer group of people.

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Golf Turf Weed Management: *NOW'S THE TIME*

By Dr. Frank S. Rossi
Department of Horticulture
University of Wisconsin-Madison

Perspective

The 1992 and 1993 growing seasons will be remembered as seasons without spring and summer. The prolonged cool-wet periods did not allow for active grass growth; even weed growth, including annual bluegrass, was relatively slow. Looking out over the Wisconsin landscape in 1994, one could not help but notice the bounty of dandelions, yellow rocket, ground ivy, clover, annual bluegrass seedheads and finally the summer annual grasses (crabgrass, foxtail, fall panicum, etc.). The weed specialists at the UW-Madison have speculated that weed seed banks remained intact through 1992-93 because of poor conditions, thereby increasing seed amounts each year.

Early spring 1994 brought intermittent moist-warm conditions that encouraged weed seed germination. These conditions were followed by more stressful mid-spring frosts and drought that encouraged weeds to set seed. The result is a sea of colors—yellow for dandelion and yellow rocket; white for annual bluegrass and clover; blue for ground ivy. For the average person this was pure joy. For the agronomist, a more fleeting joy was followed by the recognition that flowering indicates more weeds to manage this year and more weed seeds for next year.

Each month during the growing season, I have the opportunity to be on Wisconsin Public Radio with my friend Larry Meiller. The spring shows are always the hardest. Many homeowners call and want to know what to do about their weeds. In most cases, their weeds are dandelions, clover and ground ivy (creeping charlie, creeping jenny, gill-over-the-ground). My answers are standard; *if you have a chronic weed problem, something is wrong with the growing conditions on your site and the best time to control these weeds is in the late summer to mid-fall.* I think they hate me for it! Nevertheless, we need to remember the best time to control perennial broadleaf weeds is in the fall, but also, preemergence grass control including annual bluegrass management can be done when things are winding down. We might adjust our mindset to focus on weed management in the fall, just as we focus our fertility in the fall.

Perennial Broadleaf Weed Management

I know as a golf course superintendent, less than 0.5% of budgetary dollars are allocated to broadleaf weed control. I bet even less thought goes into making these decisions. Simply, if we manage a dense turf in the playing area, weeds cannot establish. Interestingly, this year many superintendents received complaints about weed growth in rough areas adjacent to play. Typically, rough areas receive less intensive management and the weeds and grasses are left to compete for resources. The weeds usually are able to establish and persist.

Spring herbicide applications of inexpensive combinations that include 2,4-D, dicamba, MCPP, 2,4-DP, MCPA, etc. are usually effective, particularly if used in conjunction with light fertilization that encourages grass growth. Additionally, advances in granular herbicide formulation technology provides the flexibility of using a granular (less involved than getting the sprayer up and going) and affords high levels of control. Still, springtime is usually hectic; short staff, actively growing turf needs mowing, many players, finishing projects, etc. Holding off your herbicide application can add challenges to an otherwise easy procedure.

High temperatures of late spring can cause herbicides to volatilize from a solid or liquid to a gas vapor. The vapor could be moved by wind and injure adjacent ornamental plants or the neighbors' vegetables. Also, as the season progresses the plant matures and directs photosynthates (food) to leaf production and seed set and away from storage organs, such as the dandelion tap root or ground ivy stolons. Therefore, unless the herbicide is shipped with the plant's food to the storage organs, it will not be killed.

Fall applications of the above mentioned mixtures remain the most economical and efficient means of weed control. The introduction of *Confront* and *Gallery* from the DowElanco corporation in the last 5 years provides additional flexibility to fall weed management. *Confront*, a pre-mix combination of clopyralid and triclopyr (found in several Turflon formulations) is a post-emergence broadleaf herbicide. It is extremely active on clover and other hard-to-control weeds such as violets, ground ivy and oxalis. Two interesting aspects of *Confront* activity include its ability to control weeds at temperatures as low as 37° F and it has been observed to have some preemergence activity. *Gallery*, active ingredient isoxaben, is primarily a preemergence broadleaf herbicide that will control emergence of broadleaf weeds from seed—not from regrowth of perennial storage organs. It has been shown to be effective on all major broadleaf weeds, as well as good activity on crabgrass. Both materials are relatively expensive and not phytotoxic to the cool-season turfgrasses except *Confront,* which will injure creeping bentgrass.

The tank mix combination of *Confront* and *Gallery* could be applied late in the season when staff activity could be less hectic, play is slow (less potential exposure and perception problems) and grass growth is reduced. The *Gallery* will restrict overseeding operations the following spring. Also, the common three-way herbicide mixture could be combined with Gallery

(Continued on page 17)

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(Continued from page 15)

and applied earlier to achieve similar results. Either strategy will control existing plants and provide preemergence activity the following spring, thereby reducing the urgency of spring herbicide applications.

Annual Grass Management

Major turfgrass suppliers in the home lawn and garden area have done an exceptional marketing campaign over the years to convince homeowners to weed and feed in the spring. Logistically, this is easiest for the homeowner—one trip across the lawn stops the weeds and feeds the grass. Why not apply preemergence herbicides for grass control (including annual bluegrass) in the fall? Several researchers including myself while at Cornell, Watschke at Penn State and Dernoeden at Maryland have shown effective crabgrass control the following season with preemergence herbicide applications the previous fall. Pendimethalin and prodiamine (*Barricade*), were consistently most effective, while bensulide (*Betasan*) was effective in some years and not in others. Inconsistencies are most easily explained by surface disruption or degradation of the chemical to an inactive form.

For annual bluegrass control strategies Bruce Branham at Michigan State and Wayne Bingham at Virginia Polytech have shown good preemergence and occasionally postemergence control of annual bluegrass with pendimethalin and bensulide. Bingham found bensulide to be effective where large populations of the annual biotype were found and less on the perennial biotype. Branham has shown excellent preemergence and early postemergence control of annual bluegrass from fall applications of pendimethalin. Therefore, if you have considered an annual bluegrass reduction program, or are currently engaged in reducing annual bluegrass in your playing areas, these herbicides should be a component of the overall strategy.

Prograss

Postemergence control of annual bluegrass is available with the use of *Prograss* (ethofumesate). This herbicide is applied in the mid to late fall and controls annual bluegrass by apparently predisposing the plants to low-temperature kill. It is widely used on Perennial Ryegrass fairways because of its safety. However, if you read the golf course journals this spring from back east, many *Prograss* treated ryegrass fairways were severely injured and many suspect the *Prograss* contributed to the problem, by predisposing all the grasses to low-temperature stress.

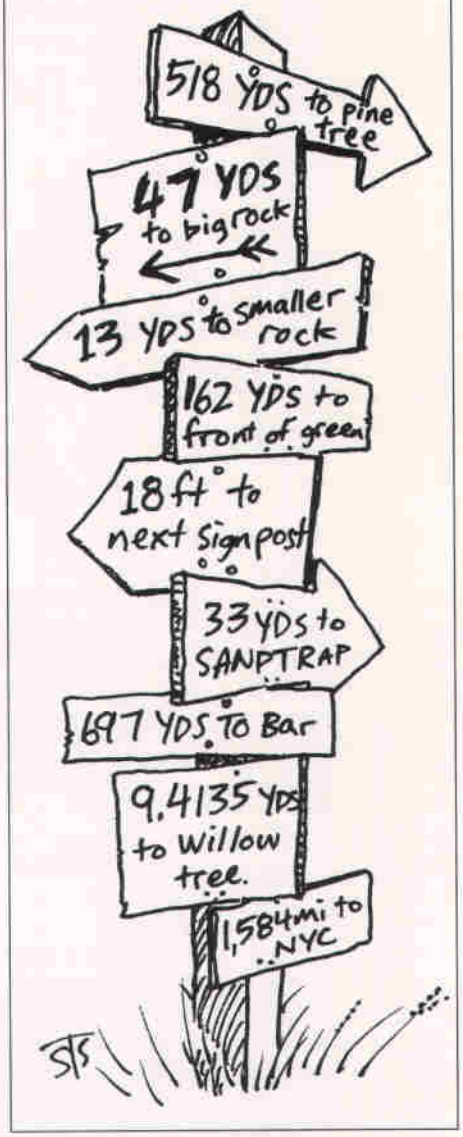
Responsible corporate representatives such as John Turner from Nor-Am (now Agrevo) do not recommend *Prograss* use on courses with more than 25% annual bluegrass, unless an aggressive reduction program is underway. It is not labeled for greens and has been shown to injure Kentucky bluegrass when mowed less than 0.75 inch. Also, I have observed *Prograss* demonstrate preemergence activity, but this has not been confirmed scientifically. Interestingly, the Scotts Company is currently developing a granular *Prograss* formulation for use with their product line.

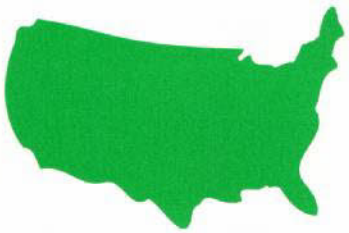
The bottom line on *Prograss* is that it is another tool in an annual bluegrass management strategy. As with all herbicides, if used carefully and correctly, it will provide exceptional results and will give your bentgrass the competitive advantage in the spring when annual bluegrass is usually first out of the gate.

Summary

The late summer and fall offer golf course superintendents wonderful opportunities for enhancing grass health the following year. Also, it is a great time to reflect on the season and set new personal and professional goals for the year to come. Experimenting and integrating new technologies into management programs will continue to be our industry's and the world's greatest challenge. In the arena of weed management, exploit environmental conditions to enhance control programs that could aid with time management in the spring. And, if you are involved in annual bluegrass reduction programs utilize all available resources to exploit its biology as a winter annual and alter the competitive balance in favor of your desirable species.

Where Will It End?





Problems of Nine-Hole Course Management

By S. P. Isaac

Editor's Note: *This should more properly be titled "From Across The Ocean" since it comes from England. It came to me, as so many excellent pieces do, by way of Jim Latham. It appeared in the April/May/June 1994 issue of SPORTS TURF BULLETIN.*

Nine-hole course are some of golf's greatest treasures in Wisconsin. This article gives some interesting thoughts about these golf courses. By the way, British spellings have been retained throughout, so please do not think the editor lost his dictionary.

On the face of it, managing 9 holes should be no more difficult than looking after 18. However, there are factors, often inherent at the very concept of the golf course, which makes 9-hole course management more of a challenge. The decision to develop a site for 9 holes, as opposed to 18, usually relates either to a lack of space or finance. Generally, it is these basic constraints which follow through to produce management problems for the shorter course.

The Poor Relation

There are many excellent 9-hole courses around the country but many golfers consider them the poor relation to 18-hole facilities. This perception is grossly unfair as some have as good, if not superior, quality of layout when compared with individual sets of 9 on 18-hole courses. To emphasize this point, the renowned golf writer Bernard Darwin described the 9-hole course of the Royal Worlington and Newmarket Club in Cambridgeshire as "a revelation", although this description related as much to the quality of the turf as to the layout. Although other courses may not deserve this epithet, any suggestion that there is a correlation between courses with holes numbering less than 18 and inferior playing quality cannot be substantiated. Indeed, if a 9-hole course is developed on land insufficient to support 18 there may be more room to design a superior course in terms of its playing qualities, assuming that the architect fully appreciates and capitalises on the opportunity. There are many 18-hole courses ruined because two or three holes have been squeezed into the available area.

Having argued the case for the shorter course, there is no doubt that 9-hole courses do have difficulty attracting visitors due to the perception of a standard 18-holes being desirable. This belief may, in part, be due to televised tournament golf where 9-hole courses are conspicuous by their absence. The supposed tedium of playing the same hole twice in a round may be another reason for the negative attitude to 9-hole courses taken by golfers. This can be overcome to a degree by having two sets of tees per hole, sited well away from each other to provide a totally different tee shot to fairway on par 4 and 5 or direct to the green on a par 3. This is only feasible where there is the available spare ground, often a luxury not afforded to 9-hole courses.

Given the opportunity there are few 9-hole courses which would turn down the chance to expand to 18. This has happened to many clubs in recent years with the decline of agriculture and farmers removing the original land constraint making fields adjacent the course available, if often at inflated prices. For those courses comprising 2,500 to 3,000 yards and a Standard Scratch Score as low as 60, the option to go to 18 should perhaps be resisted if there is only the room to double the existing yardage, and it may make more sense to create a quality 9-hole layout with a better balance of par 3, 4 and 5 holes. There are some superb 9-hole layouts with a special character of their own which would be impossible to replicate through 18; it is not unknown for a good 9-hole to be ruined by adding on additional holes.

Practical Problems

Even if only 9-holes are available, a round of golf still constitutes 18 and the consequence of this is double the wear for each hole on the shorter course. If room was a constraint in the concept of the 9-hole course it is unlikely that much thought will have been given to producing large greens, tees of adequate size and number or wide, diverse traffic flow routes. With a "double pass" of golfers playing a full 18 there will be greater tracking and chance of erosion around the same navigational routes. Those 9-hole courses having the luxury of playing from separate tees for corresponding holes on front and back nine, can see a reduction in localised wear damage if the layout provides for a variation in fairway landing area and approach from tee to fairway or green. A tighter layout provides less opportunity for diverting winter play, making trolley bans and traffic regulation more important to preserve the 9-holer through the winter. This question of access around the course has implication for machinery as well as golfers, concentrating tracking

and limiting options for navigating the course. If the layout takes up most of the available room then maintenance vehicles may encroach more onto the playing areas of the 9-holer. Less room through the site may necessitate having to mow everything, an additional maintenance burden which many 18-hole courses negate by promoting banded rough and conservation areas.

With half the number of holes it will not take long for the 9-hole course to become choked with golfers first thing in a morning, leaving a minimum of time for important maintenance, e.g. greens mowing. On 18-hole courses play is occasionally staggered, golfers teeing off on 1 and 10 simultaneously, a practice which can give the well organised course manager a little leeway in keeping in front of golfers. This prospect is not ever afforded to the manager of a 9-hole course. Maintenance time for 9-holes is not half that of the 18-holer because the down-time, i.e. travelling around the course, manoeuvring around small greens and small tees, can take up a major proportion of management hours where there are fewer options for traffic movement. The manager of a 9-hole complex will also have more interruptions to his work through the day than will his 18-hole counterpart, the same number of golfers on each course will leave far more gaps for work when then are spread over the greater number of holes.

Golf courses developed on poor land or with poor quality materials will always perform badly in adverse weather and require constant attention, with drainage and aeration to provide playable conditions through all but the driest of months. Any such difficulties on an 18-hole course will be magnified on the shorter course as a consequence of traffic restriction. If finance was a constraint in the original decision to build 9, then the problems of attracting visitors and charging a large fee may ensure that inadequate resources are available to carry out necessary improvements and to repair damaged ground properly.

Balancing the Budget

Essentially the same machinery range is required to look after 9-holes as for 18; a greens triple mower is still required to cut the greens however many there may be. At first glance it may be thought that hand cutting is more feasible on a 9-hole course, but the time factor, or lack of it, may make triple cutting essential. The only significant saving made in the maintenance budget will be for materials where half the top dressing, fertiliser and fungicide can make for a tidy saving, although the difference can be eaten up by increased costs for repairs. However, fertiliser and pesticide bills may not necessarily show a reduced level of expenditure, due to playing demands requiring a greater input to stimulate growth, compensating for the greater concentration of wear and possibly a greater level of disease control to weakened turf.

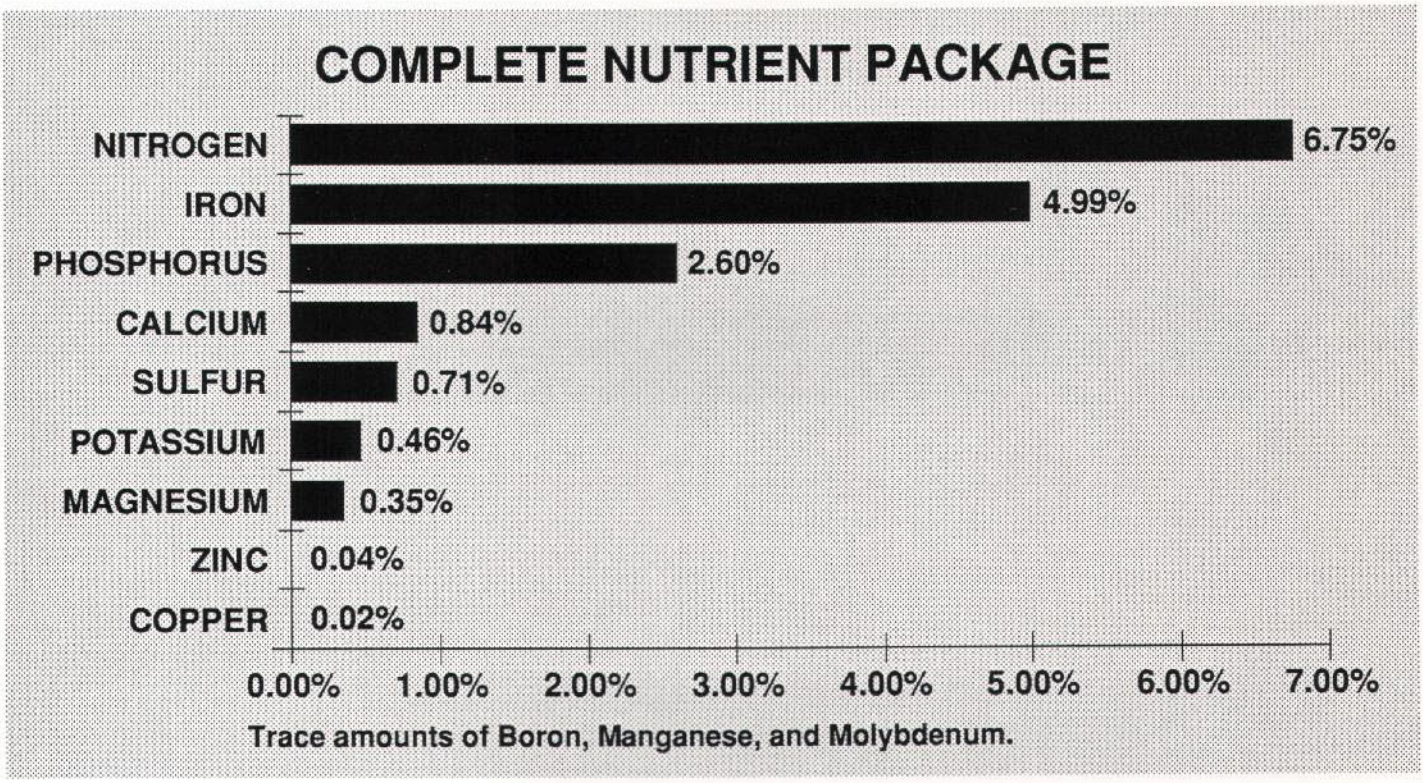
Equivalent costs with reduced income will not make the club's accountant a happy man and 9-hole courses will struggle when it comes to major outlays, e.g. irrigation, construction projects, and the purchase of large machines such as a Verti-Drain. In terms of promoting the course towards fulfilling its potential these are items which the 9-hole course will benefit from as much as, if perhaps not more than, an 18-hole but they can be a long time coming if not neglected altogether. Teeing grounds are possibly the one area on 9-hole courses which suffer most from wear and a lack of maintenance input often due to financial restriction. Irrigation to tees and enlargement may fall by the way when they are perhaps of greater necessity to courses where the same tees are played off twice in a round.

Let's not forget the men who actually do the spadework on the golf course, the greenkeeping staff. More often than not two men are asked to do to 9-holes what five, and sometimes six cope with on 18. Bearing in mind the practical drawbacks of maintaining 9-holes, this mathematical imbalance is exaggerated. There is also the major problem of holidays and sickness, at least there is some backup on the 18-hole facility.

The 9-hole Dilemma

Nine-hole courses are handicapped from the outset by being subject to double the wear of their 18-hole counterparts. Charging lower fees to attract golfers, 9-hole courses must draw a greater number to bring similar revenue and the result can be a lack of resources to make up for heavier wear damage. The balance between desirable revenue and coping with a high level of play is a difficult one to achieve for any course, the restriction of circumnavigating 9-holes twice with duplication of wear routes makes the equation even more difficult. The unfortunate image that 9-holes tend to be saddled with, i.e. being the intermediary between the park pitch and putt and a full blown 18, if you like a stepping stone up the golfing ladder, is unjustified as the demands involved in looking after the shorter course are as great as those imposed on any course manager. A quality playing surface comes through sensible greenkeeping practices and the basics of course management are universal however many multiples of 9 holes are being overseen. Resources are the key to having the opportunity to fulfil the potential of any course and in this respect, the 9-holer is severely disadvantaged.

A Whole Lot More Than 6-2-0!



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