

Automatic Irrigation for Today's Golf Course

Irrigation, the application of water to the soil, is playing a leading roll in the establishment of the type of golf course that is being demanded by the golfing public today. With the new and increased technological advancements of the automatic irrigation systems, the Golf Course Superintendent can provide a course with more natural beauty and better playing conditions throughout the golfing season. This is brought about by the increased control the Superintendent has over the water which, in turn, dictates the quality of grass grown.

Looking from both agronomic and golfer standpoints, the following are a few of the many reasons an automatic irrigation system will benefit the modern golf course today.

Central Programming — Central programming has been developed to provide for the complete control of the irrigation system from one central location, usually the Superintendent's office. The purpose of the Central Programmer is to activate the Field Controllers simultaneously by means of automatically controlled timing clocks, or manually. These field units are located throughout the golf course in close proximity to the valves being controlled. In addition to initiating the normal irrigation program which is set in the field units, the Central Programmer is the means by which the syringe cycle is activated. When the desired syringing is completed, the Field Controllers are returned to the normal program.

Less Labor Involved — Since automatic irrigation is a one man operation that requires little time to program the system, your labor costs will drop considerably. One Superintendent who recently had an automatic system installed on his eighteen-hole golf course stated that his normal crew of fifteen men during the golfing season was dropped to thirteen men. The two less men were night water men paid at a 50 cents hourly shift premium. The estimated savings was between \$5,000 and \$6,000. In addition, savings of \$2,000 to \$3,000 were made by having the syringe cycle that replaced the men he used for hand watering greens and tees for dew or fertilizer.

Less Chance of Overwatering — Until automatic watering was introduced, the Superintendent had very little control over the amount of water being applied to his golf course. The irrigation program usually consisted of sending out the watering crew to change the settings every one half hour to one hour depending on the grass requirements and type of water supply. In some cases too much water would be applied between the settings because they did not have sufficient time to make the rounds. In addition to this, he would sometimes be required to "dump" the water on in order to maintain the turf through periods when help was not available, such as a holiday weekend.

Overwatering results in serious soil compaction and weakens turf and destroys resiliency. A vigorous turf and the right mixture of soil along with the proper amount of water will provide the qualities necessary to hold the golfer's shot that is well played. Nothing is more discouraging to a golfer than to see a well placed shot bounce or roll over a green.

In addition to the above, excessive moisture causes the roots to become shallow and restricted, which, in turn, makes the turf more susceptible to disease. Along with this excessive moisture produces lush grass and thus, makes it more prone to disease infestation.

Conservation of Water — In a time when the public has become conservation conscious due to the increased population growth and industry expansion, there is increasing concern about the impact this growth will have on man's environment. With today's golf courses being maintained primarily by chemical means rather than mechanical tools we should consider the effects of overwatering and how it can produce runoff that may cause pollution if allowed to enter public waterways. By use of today's automatic systems, we can better control runoff and help conserve our most important resource by our ability to apply water in light frequent applications.

Ability To Help Control Disease — Disease prevention goes hand in hand with the problem of overwatering. The organisms that cause serious turf disease develop most rapidly when soil moisture is high. The fungi that cause turf disease need liberal quantities of moisture for germination of spores and sclerotia, and to keep the mycelium strands growing actively. The latter are very delicate and cannot withstand drying out. Saturated soils and high humidity create ideal conditions for their rapid development along with poor drainage and excessive rains which keep the soils waterlogged for long periods of time. Heavy dews that keep the foliage wet for long periods of time is a big factor that favors fungi growth. This is where the irrigation syringe cycle proves to be very beneficial. With this cycle dew can be removed from the entire course in a matter of minutes.

Wilt Prevention — Turf can be protected against wilting in periods of hot, windy weather by frequent applications of limited quantities of water to reduce transpiration rates and soil temperatures. Wilting occurs when plants transpire (evaporate) water from the leaf surfaces faster than the roots can take it up from the soil. This is another application where the syringe cycle is successful in providing the needed moisture.

Grass Type Selection and Plant Establishment — Since turfgrass varieties require different amounts of water for proper growth and development, the controlled use of water by means of an automatic system will enable the Superintendent to select the type of grass that is best suited for his course. For instance, those grasses such as bentgrass and *Poa Annua* possess shallow root systems. These grasses will require frequent watering as compared to the bluegrasses and fescues which have a deeper root system that can withstand less water. The reason for this is the greater surface area of the deep rooted plants. In cases where a deep rooted plant has shallow roots it is possible to increase the surface area by watering less.

The automatic irrigation system is also beneficial in establishing new seedlings and vegetative plants because you can apply light frequent applications of water that will not wash, puddle, or crust the soil surface.

Prevention of Winter Drying — In cases where you have limited late season rainfall and/or little snowfall through the winter, excessive drying out (desiccation) of the grass may take place. With an automatic sys-

tem it is possible to turn on the water during the winter to restore the needed moisture on the upper level of the soil.

Control Placed In The Hands Of An Expert — Since water comprises 80% or more of the grass plant and between 500-600 pounds of water is required to produce 1 pound of dry matter, it is a small wonder of the importance of proper water management in maintaining a high quality golf course.

It is impossible for any one to tell the Superintendent what the proper water management is for his golf course. The amount of water required will depend upon the type of grass, the locality, and the physical characteristics of the soil. With an automatic system the watering program is placed in the hands of an expert, the Superintendent. No one knows better than he the requirements of his golf course.

During the past decade we have witnessed a phenomenal growth in the number of golf courses in the United States. Such factors as more leisure time due to shorter work weeks, better access to golf courses by means of interstate road systems, and more money to spend on recreation (taking into account inflation) have all contributed to the increased popularity of the sport of golf. In order for us to cope with the heavy play brought about by these factors, we must think management. For the reasons stated in this article, automatic irrigation on today's modern golf course is one of the prime requisites for proper turfgrass management.

Ron Graves
Chicago Sales Engineer
Miller Sprinkling Systems



Since fivesomes were not allowed, it is up to you to convince yourself that there are only four pictured here.

The Oldest and Largest Tree Service in the World

— COMPLETE TREE CARE —

Pruning
Spraying
Feeding

Tree Planting
Tree Removals
Inspections

DAVEY TREE EXPERT CO.

O. S. SIMPKINS — PAUL MALLORY

District Mgrs.

1901 W. Algonquin Rd., Mt. Prospect, Ill. 60056
437-4080

TURF PRODUCTS, LTD.

- 1106 N. Scott Street
- Wheaton, Illinois 60187
- Telephone 668-5537



TURF PRODUCTS, LTD.

C. E. STEWART

Civil Engineer

Irrigation, Drainage, Water Supply, Pumping Plants
Design — Reports — Consultation — Supervision
18357 Homewood Ave. Homewood, Illinois

AQUA-GRO QUALITY BLENDED WETTING AGENT
AQUA-T LOW COST BLENDED WETTING AGENT
STOMA-SEAL CHEMICAL CONTROL OF WILT

AQUA-GRO GRANULAR

CONVENIENCE OF
APPLICATION



FOR THE PROFESSIONAL TURF MANAGER

- WALTER FUCHS
- 1106 N. Scott Street
- Wheaton, Illinois 60187
- Telephone 668-5537



TURF PRODUCTS, LTD.