

Irrigation of Lawns and Gardens¹

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Normal rainfall in Florida ranges from 52 to approximately 60 inches per year. However, more than one-half of the annual total rain falls from June through September. During the winter and spring lack of rainfall may seriously affect lawn and garden growth without supplemental irrigation.

Often, droughts are thought of as long periods of time, such as months or years without rain, but Florida can experience drought conditions after only a few days without rain. This is a result of the very sandy soils in most of the state. Even during the rainy season, evapotranspiration (ET) rates may be high enough that irrigation of shallow rooted crops is required in order to avoid excessive water stress. Since the roots of most ornamental plants and grass are quite shallow, these plants are able to uptake the water stored in only the top 6 to 12 inches of the soil profile. Garden vegetables may develop deeper roots and be able to obtain water from depths of 18 to 24 inches. However, Florida's sandy soils have very low water holding capacities, and therefore the amount of water stored in the root zone, and available to the plant is very limited. Consequently, to avoid water stress, soil moisture must be replenished frequently by natural rainfall or supplemental irrigation.

Many irrigated lawns, with frequent, high levels of soil moisture content, would undergo stress from a sudden restriction of water or elimination of irrigation. Some changes in water management and scheduling of supplemental irrigation can improve the drought resistance of turf and should be included in lawn management. This process is called drought conditioning. The objective of drought conditioning is to grow a good quality lawn that will survive on little or no supplemental irrigation. It includes proper water application, good mowing practices, fertilization and pest control. Water management aspects for lawns are discussed Extension Publication ENH-63, "Let Your Lawn Tell You When to Water". Information on other aspects of drought conditioning is included in IFAS Extension Publication ENH-57, "Preparing Your Lawn for Drought".

WHAT CAN BE EXPECTED FROM HOME IRRIGATION SYSTEMS

A typical homeowner is often unaware of what is involved in the construction of a sprinkler or micro-irrigation system. Often, it is thought that in buying an irrigation system one is buying complete freedom from future watering problems. However, even with a well-designed system this may not be true. A well-designed, good quality system will significantly simplify watering, but it must be managed properly. Proper management includes proper operation as well as regular maintenance.

A good irrigation system may be expensive, but the investment should be repaid in time savings and landscape maintenance. An irrigation system should water a lawn and garden adequately and efficiently. This can be accomplished with proper design, properly selected good quality equipment, and good management, regardless of the size and complexity of the area which is irrigated. Major reasons for unsuccessful irrigation systems include: 1) poor spacing of sprinklers/emitters, 2) undersized pipes, and 3) poor management.

WHY DO YOU WANT YOUR SYSTEM PROPERLY DESIGNED?

Many home systems are not designed at all. An installer may walk over the lot and place markers at the approximate locations of proposed sprinkler sites. This is not a good beginning to achieve uniform and efficient water application.

A design should begin with a scaled map of the area which includes existing buildings, trees, shrubs, and sidewalks. The areas where water should not be applied (examples: walls, sidewalks) must be considered as well as areas where irrigation is desired. It is much easier to decide on paper where to put certain sprinklers by considering their areas of coverage, checking if sufficient overlapping exists, and making sure that all of the area is uniformly watered.

An existing water supply system must be examined to determine flow and pressure limitations. The number of sprinklers which can be operated at the same time should be calculated. Frequently, a system must be divided into zones. Each zone is designed to fit the water supply system by determining the most efficient way to connect sprinklers into groups. The pipes must be sized based on the water flow rate. Usually, several pipe sizes will be required within a single system. It is much easier to assure at the planning stage that the system will provide what is expected rather than to attempt to manage a poor installation.