Micro (Drip) Irrigation Rebate Program

UNDERSTANDING MICRO (DRIP) IRRIGATION BY SOIL TYPE

Micro (Drip) Irrigation Recommendations by Soil Type

When determining how to set up a micro (drip) irrigation system, soil type is an important factor to consider. There are three main soil types, each with a different adsorption rate: Clay, Loam, and Sand. *If you are unsure of your soil type, a Water Conservation Landscape Specialist can assist you with that information at the appointment.*

Soils with larger particle size (sand) have larger voids to accept water, while soils with smaller particle size (clay) have smaller voids to accept water. The downward movement of water due to gravity is therefore greater for soils with larger particle size, and smaller for soils with smaller particle size.

Recommended drip irrigation emitter flow rates and spacing vary depending on the physical properties of soil as related to water movement:

- **Clay** absorbs water slowly, causing it to spread on the surface and form a roughly inverted cone shape below ground. For that reason, watering slowly with 1 gallon per hour (GPH) emitters spaced farther apart is best to achieve efficient penetration in clay soils.

- **Loam** absorbs water at an even rate, usually forming a cone-shaped pattern as it spreads below ground. A 1-2 GPH emitter is usually sufficient for loamy soils.

- **Sand** absorbs water quickly in an almost straight down pattern. In most cases, a 2 GPH emitter spaced closer together with shorter, more frequent watering will provide the right amount of water to ensure root coverage in sandy soils.

Soil Type	**CLAY**	**LOAM**	**SAND**
Wetting Pattern			
Particle Size	Fine	Medium	Coarse
Soil Description	Holds more water; Slow to absorb water; Slow to release water	Very porous; Absorbs water evenly; Retains moisture; The optimal soil type	Extremely porous; Allows quick water flow; Doesn't retain water
Recommended Emitter Flow Rate	1 GPH	1 - 2 GPH	2 GPH
Maximum Infiltration Rate	0.13 – 0.25 inches per hour	0.25 – 0.75 inches per hour	0.72 – 1.25 inches per hour
Maximum Wetted Diameter (Depends on run time)	3 – 6 feet	2 – 4 feet	1 – 3 feet

CALCULATING YOUR MICRO (DRIP) IRRIGATION REBATE

Rebate amount is based on the square footage of the area covered by the newly installed drip irrigation system. This is calculated based on the soil type, the number of emitters and run time (minimum 1 hour run time without runoff).

1. Calculate the square footage of coverage per emitter for the soil type of your yard. This figure will vary depending on programmed run time. A minimum 1 hour run time without runoff is required for the Micro (Drip) Irrigation Rebate.
2. Calculate the total square footage for the rebate, based on the square footage of coverage per emitter and the number of emitters.
3. Calculate the total value of the rebate.

Square footage of a circle = π x Radius^2

Calculation Example:

Number of emitters: 25
Soil type: Clay
Radius for clay soil: (1/2 of Maximum Wetted Diameter): 1.5 to 3.0 feet
(A Landscape Specialist will help you determine the exact value of the radius based on your programmed run time)
Value of π: 3.14

1. Calculate the square footage of coverage per emitter for the soil type of your yard.
   (This figure will vary depending on programmed run time)
   = π x Radius^2
   = 3.14 x (1.5 to 3.0 feet)
   = **7 to 28 square feet**

2. Calculate the total square footage for the rebate:
   = Square footage per emitter x Number of emitters:
   = (7 sq ft x 25 emitters) to (28 sq ft x 25 emitters)
   = **175 to 700 total square feet**

3. Calculate the total value of the rebate:
   = Total square feet x $0.55 per square foot
   = (175 total sq ft x $0.55) to (700 total sq ft x $0.55)
   = $96.25 to $385 total rebate value

IMPORTANT NOTE:

The example above calculates the range of total rebate value possible for the example conditions. The unknown factor in the rebate calculation is the run time for each emitter, which determines the actual square footage of coverage per emitter.

A Water Conservation Landscape Specialist will help calculate the exact value of the radius and the total rebate value based on your soil type, number of emitters, and programmed run time. An estimated rebate amount will be calculated during the Water-Wise Landscape Consultation prior to drip irrigation installation, and the final rebate amount will be calculated during your post-installation inspection appointment.