



# BIOFLO

## BIO-ENZYMATIC LINE CLEANER

*Keeps lines flowing while you're growing*

### WHAT IS BIOFLO?

BioFlo is an all-natural bio-enzyme solution that uses biological and enzymatic action to clear buildup of biofilm. Contains biologically active ingredients without any harmful chemicals and is 100% safe on plants, animals and rootzone.

- BioFlo restores irrigation systems to full capacity by clearing clogged lines and emitters.
- Unlike chemical irrigation line treatments, BioFlo does not harm plants or soil and is safe to use throughout the growing process.
- Compatible with injectors, reservoirs, and tank application systems.
- BioFlo can be used to treat existing clogs and to prevent future clogs.
- BioFlo cleans out hydroponic and nutrient water reservoir accumulations.

### USAGE INSTRUCTIONS



**MIX ONLY ENOUGH  
BIOFLO SOLUTION TO  
FILL IRRIGATION LINES  
FOR A SOAK**

#### STEP 1

Use this **PVC Volume Chart** to calculate your irrigation line volume of water.

**PVC VOLUME CHART**

PVC SIZE (inches)	GALLONS/FOOT
1/2	0.01
3/4	0.02
1	0.04
2	0.16
3	0.37

#### RESERVOIR MIXING INSTRUCTIONS

**HEAVY**

- 30 ML BioFlo per gallon of non-chlorinated water
- Soak for 8-24 hours
- Repeat as needed

**PERIODIC**  
(once every 1-2 weeks)

- 15ML per gallon of non-chlorinated water
- Mix only enough solution to fill lines or add to end of reservoir circle before refilling
- Soak for 8-24 hours then drain or run next feeding

#### FERTIGATION APPLICATION INSTRUCTIONS

**HEAVY**

- Injection ratio 1:100 (1%) 1 Gallon BioFlo will make 100 gallons of solution
- Inject into lines and allow to soak for 8-24 hours
- Drain into plants
- Repeat as needed

**PERIODIC**  
(once every 1-2 weeks)

- Injection ratio 1:200 (.5%) 1 Gallon BioFlo will make 200 gallons of solution
- Inject into lines until slight runoff
- Soak for 8-24 hours then drain or run next feeding

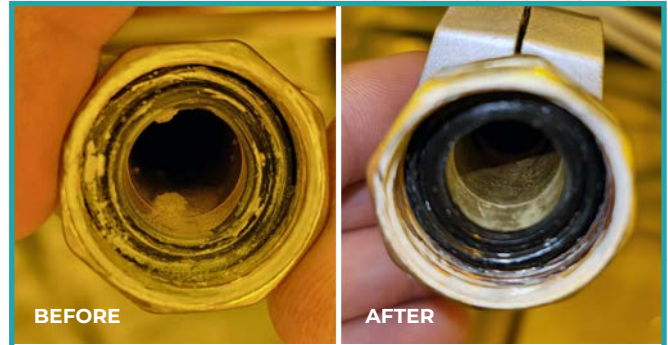
## UNDERSTANDING BIOFILM CLOGS IN IRRIGATION SYSTEMS

Biofilm clogs form rapidly in cool, moist environments – exactly the environments found in irrigation lines.

Microbes come from common additives such as fertilizers. Fertilizer nutrients act as food for biofilm microbe growth.

Once a biofilm starts to grow, it “sheds” microbes, which then make even more new biofilms.

Biofilms are extremely difficult to remove, as chemical treatments can't penetrate past the biofilm surface.

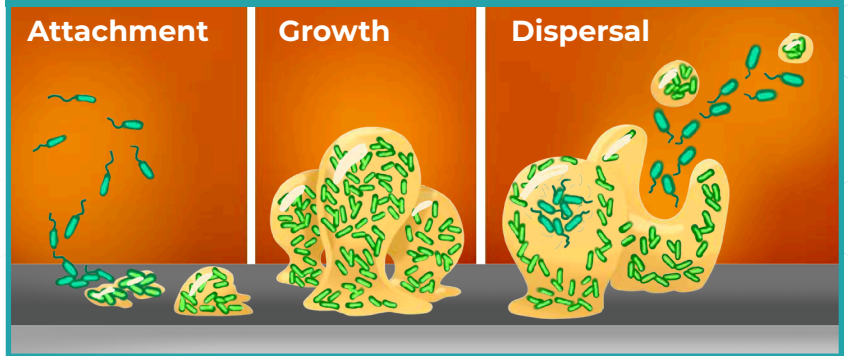


**Irrigation Line Before & After BioFlo**

Breaks down macromolecules that make up biofilm clogs.

In order to clear irrigation line clogs, your line cleaner must have the ability to rapidly break down the macromolecules that make up biofilms.

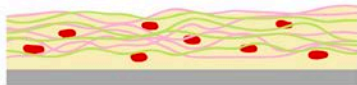
### HOW BIOFILM CLOGS FORM



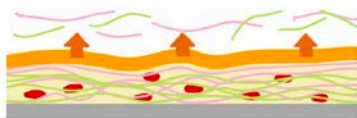
## STANDARD LINE CLEANERS VS. BIOFLO

### Standard Cleaning

Failure to eliminate biofilm  
poor hygiene, high contamination risk



1. Biofilm before treatment



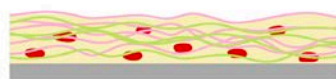
2. Superficial action



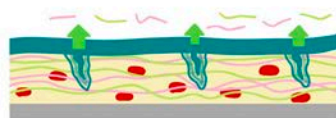
3. Some bacteria remain trapped in biofilm structure

### Enzymatic Cleaning

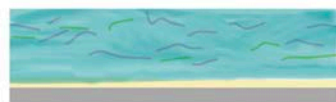
Biofilm removal w/ BioFlo  
optimal hygiene, no contamination risk



1. Biofilm before treatment



2. In-depth action



3. All bacteria are free flowing and purged from system

Standard irrigation line clog treatments use chemicals that *only treat the surface* of irrigation line clogs, and damage plants and soil.

BioFlo is comprised of microbes that actively “digest” and break down biofilm clogs entirely, *not just clog surfaces*.

BioFlo microbes are 100% natural and **can be used throughout the growing season**. BioFlo works on irrigation lines, emitters, reservoirs - any surfaces with biofilm and scale accumulations.