

Pitahaya Irrigation

2015 Pitahaya Production
Seminar



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Drip Irrigation for Pitahaya

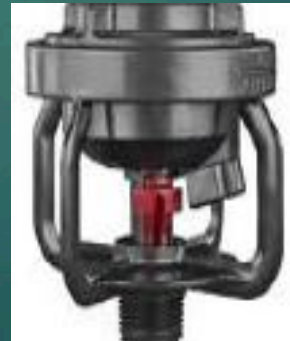
- ▶ More efficient watering:
 - ▶ Not all areas wet
 - ▶ Limited runoff
- ▶ If properly managed
 - ▶ Provides an excellent soil water environment
 - ▶ Limits over- and under- watering
- ▶ Limits weed growth
- ▶ Adaptable to terrain, slopes, odd shaped areas
- ▶ There are parts and equipment available to meet just about any need....

Design and Assembly

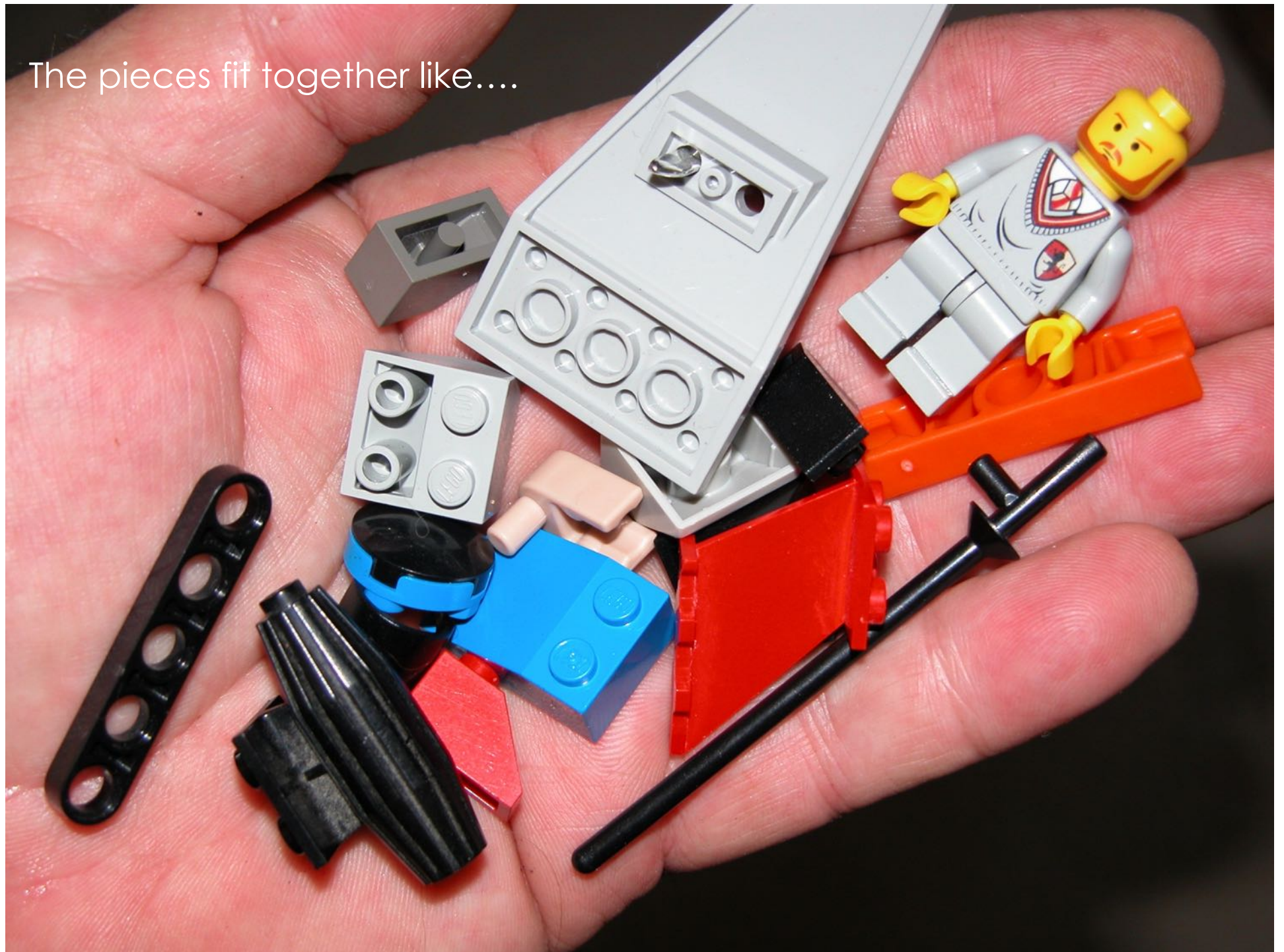
- ▶ Proper Design and Installation is important for any irrigation system.
- ▶ Drip can inherently attain higher uniformity and efficiency.



Many different brands/ types



The pieces fit together like....



Emitter spacing and placement



- ▶ Emitter spacing is dependent on the flow and on the hydraulic conductivity of the soil and the rooting characteristics of the plants.
- ▶ Emitters must be placed to irrigate the root ball of newly planted trees and shrubs.
- ▶ Emitters shall be moved away from the root ball as the plant becomes established.

Equipment



Filters,
Backflow preventers
Pressure Regulator
Injection system
Flushout Valves
Controllers

Why filter?

- ▶ To improve water quality
- ▶ To prevent emitter clogging

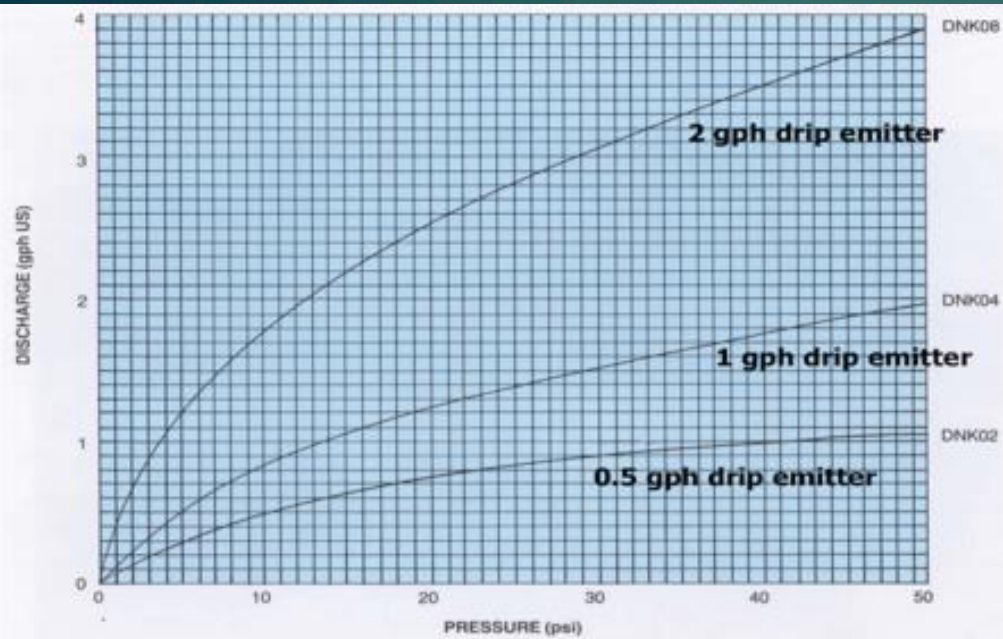


Pressure Monitoring

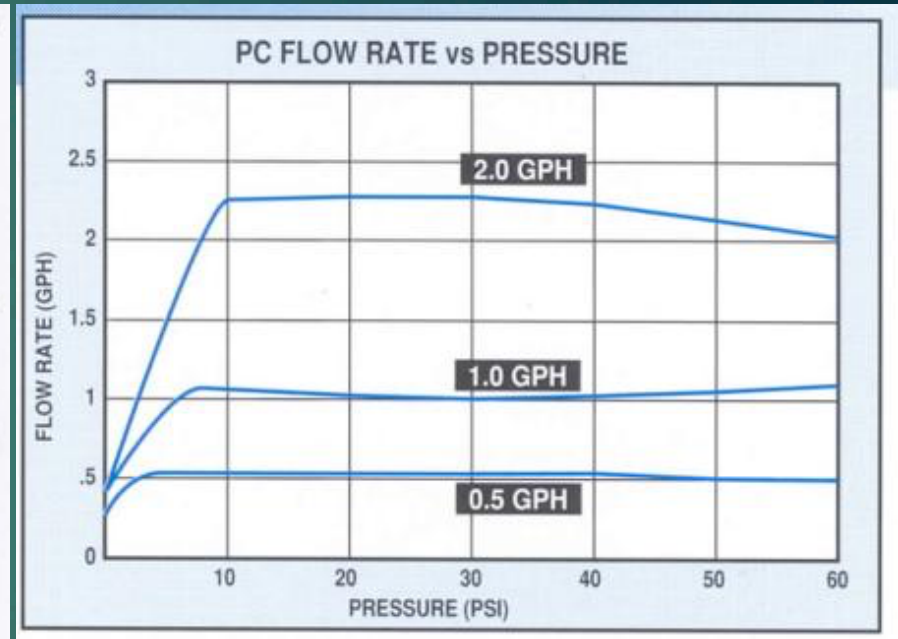
- ▶ Flow and pressure are related
- ▶ Check Equipment specifications



Discharge vs. pressure



Discharge vs. pressure for drip emitters with no pressure compensation.



Discharge vs. pressure for pressure-compensating (PC) drip emitters

Pressure compensation:

- ▶ Necessary for uniform output
- ▶ Achievable by using pressure regulators at strategic locations (slopes).
- ▶ Utilizing pressure compensating emitters.



Measuring pressures

- ▶ Main line
- ▶ Laterals
- ▶ Risers
- ▶ Emitters



Ongoing Maintenance

- ▶ Schedule filter cleaning and flushing
- ▶ Equipment checks – walk the lines
- ▶ Pressure checks
- ▶ Hose end flushing

Distribution Uniformity (DU)



- ▶ Ideally, all irrigated areas should receive the same amount of water.
- ▶ If DU is high ($>90\%$), most plants will receive the same amount of water.
- ▶ If DU is low ($<70\%$), some plants will receive more water than others.

Importance of Distribution Uniformity

- ▶ Not enough water results in high soil moisture tension, stressed plants and yield reductions.
- ▶ Too much water can also reduce yields through nutrient leaching, increased disease incidence or problems with proper growth stimulation.



Auditing Drip Systems

- ▶ Difficult, especially if buried!
- ▶ Check integrity of the system (leaks, clogged emitters, filters)
- ▶ Flush lateral lines
- ▶ Check overall flow rate.
- ▶ Dig up the system and test!
- ▶ Schrader valves, pressure testing, use of popups to signal pressure is OK.

Best Management Practices

- ▶ Check your system's distribution uniformity
- ▶ Review irrigation scheduling and maintenance
- ▶ Check your system components frequently



Questions

