Avocado Special Topics – Distribution Uniformity

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Mini-sprinklers

- Apply anywhere from 4 gal/hr to 30 gal/hr
- A major drawback, the amount of water placed on the outside 2/3 of the wetted surface may be as little as 1/3 of the amount placed on the inside of the wetted pattern
- We can't really correct this lack of uniformity under the tree

Efficiency of Water Application

- Distribution uniformity in a grove is the uniformity of water application to each tree
- This is the “measure of the efficiency of an irrigation system”
- 100% DU is perfect….each tree gets exactly the same amount of water
- Because of pressure losses in lines and uneven terrain, we never get a DU this high

Why is DU important?

- If the DU is low, we have to irrigate the whole grove more in order for each tree to get the required amount of water
- This means that some trees will get a lot more water than they need

How to measure DU

- If you have 100 emitters, identify at least 12 that you will check
- Catch water out of each emitter into a graduated cylinder, for 15 seconds each
- Arrange the results from low to high
- Add them all up and get the average
- Average the amounts from the “low quarter”, (1/4 of the emitters putting out the lowest amounts)
- Divide low quarter avg by avg from all emittters
- Multiply by 100 to get %DU

What to do about a low DU

- If it is less than 80%, do something!
- Make sure you have enough water for the irrigation blocks in your grove
- Routine maintenance

1. Check for leaks, backwash filters, flush lines, may have to chlorinate or acid wash the emitters
2. Make sure all emitters are the same
3. Coyote damage!---the puppies love to chew

Also

- Set up lateral lines with a pre-set pressure regulator, this will solve the problem of water going up the hill and losing pressure
- Be careful what you put in your fertilizer tank, some chemicals will precipitate and clog all of the emitters