Avocado Irrigation Calculator using CIMIS

(California Irrigation Management Information System)

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The irrigation requirement can be calculated each week by using CIMIS (California Irrigation Management Information System). CIMIS is a network of weather stations throughout California that takes daily information on evapotranspiration (ETo) of eight-inch tall grass and sends this ETo to a computer in Sacramento. ETo is basically the amount of water lost each day from this grass; it is calculated in inches of water. You can download this information when you want to irrigate your avocados and put it into an "irrigation calculator". This information will be multiplied by the crop coefficient developed for avocados by UC Cooperative Extension farm advisors and specialists . This will give you the amount of water lost each day by avocados through transpiration and evaporation from the soil surface. Then, **assuming the weather doesn't change**, you can replace that amount of water when you irrigate.

Follow these steps to use the irrigation calculator:

1. Go the website http://www.avocadosource.com/
2. Click on Tools
3. Click on Irrigation Scheduling Calculator
4. Next to Kc source, click on California New Values in the dropdown box
5. Next to 'Data Source': select CIMIS from the dropdown box. Then click on Data Source.
6. Then click on www.ipm.ucdavis.edu/WEATHER/wxretrieve.html. This will send you to the IPM website (weather, models and degree days).
7. Scroll down and select "stations" in San Diego. Click "Submit".
8. Scroll down to "Escondido" for our example.
9. Click on "Daily Data"
10. Select a time period. Most growers select the previous seven days, but you can adjust this according to weather conditions in the last few days.
11. Leave everything checked, scroll down to "Retrieve Data" and click.
    a. Write down the daily ETo data and add the numbers.
    b. Use this space for **your** calculation each week:

c. ___+___+___+___+___+___+___+___=___

12. Close this website by clicking the back arrows. You will go back to the Irrigation Scheduling Calculator website page.
13. Under "Reference Evapotranspiration" (ETo), put in the total from 11c.
14. Under "Crop Coefficient (Kc)", Click on the current month.
15. Under "Distribution Uniformity" put in 85 (for 85% uniformity). **Caution….a common mistake here is to put in 0.85. Make sure you put in 85 to indicate 85%. If you have a distribution uniformity number from the Mission Resource Conservation District in Fallbrook for your personal grove, use that number.**
16. Under "Leaching Requirement" put in 10. **This means that you are irrigating with 10% extra water to leach the salts below the root-zone.**
17. Under "Trees per Acre" put in 105 (there are actually 109 on a 20' x 20' spacing, but there are grove roads with no trees).
18. Under "Number of emitters per tree" put in 1. **This means that you have one mini-sprinkler per tree.**
19. Under "Emitter Output" put in your gallons per hr output from one mini-sprinkler in your grove .
20. Under "Grove Size", for this example leave the number at 1 (for one acre).
21. Click "Calculate".

You should get:

Water per tree per day or **period**: If you used seven days for the "period", this is your answer _____.

Watering time per day or **period**: **_____**

Total water requirements for this one acre grove: **_____ gallons**