Avocado Irrigation Calculator using CIMIS

(California Irrigation Management Information System)

Example

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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. For this example try January 29- February 4, 2013.
11. Leave everything checked, scroll down to "Retrieve Data" and click.
12. Write down the daily ETo data and add the numbers. For this example it was:

a. __0.06__ +__0.09__ +__0.10__ +__0.11__ +__0.07__ +__0.10__ +__0.10__ =__0.63__

Use this space for **your** calculation each week:

    a.

    b.

    c.

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 0.63.
14. Under "Crop Coefficient (Kc)", Click on February (for this example).
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%.**
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. For this example use 17.
20. Under "Grove Size", for this example leave the number at 1 (for one acre).
21. Click "Calculate".

You should get (for this example):

    Water per tree per day or **period**: 181 gallons. **Since we used a 7 day period in our example, this means that one tree in this grove used 181 gallons during this 7 day period.**

    Watering time per day or **period**: **10 hrs and 40 minutes**

    Total water requirements for this one acre grove: **19,039 gallons**