



Furrow irrigation duration

fact sheet

If only field observations are feasible, make sure **appropriate furrow length** has been chosen and follow the basic steps below to determine irrigation duration:

1. Estimate irrigation duration

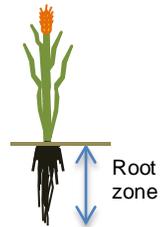
As a rule of thumb, irrigation duration should be about **4-5 times the advance time** (i.e. time it takes the water to reach the end of the furrow). For example, if advance time takes 30 min then irrigation duration should be around 2-2.5h.



2. Adjust based on field observations of soil moisture

Check soil moisture at the end of the furrow 24 hours after irrigating. Then you can maintain, reduce or increase irrigation duration based on your observations:

- ✓ Enough water should be applied to the root zone. Enough water means that soil is adequately wet at root depth but not beyond. Root depth changes throughout the season, so check current root depth next to a healthy-looking plant that is growing well.
- ✓ Depending on soil texture, adequately wet soil should hold together when squeezed, and leave soil/water coatings on fingers. Unless it is sand to loamy sand soil, it will also form a ribbon. See Fact Sheet and Video “Soil moisture by feel” on <http://eafghanag.ucdavis.edu> for more details.



- ✓ Water is most limited at the end of the furrow. If soil moisture looks good there, then it is likely good along the whole furrow (see wetting pattern, Figure 1).
- ✓ Observe soil moisture at several critical points in the field (e.g., farthest point from the water delivery point, middle of field, low spots, shallow soil areas, etc.) to get a complete picture of where irrigation management and field layout can be improved.

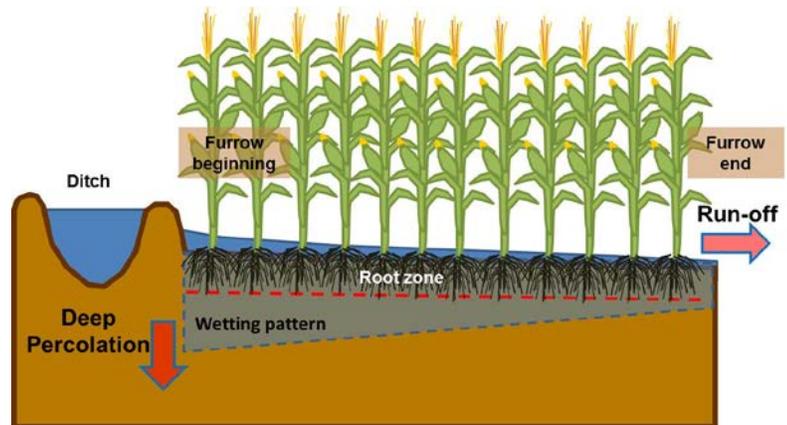


Figure 1. Wetting pattern in furrow irrigation. Water is most limited at the f f furrow. Source: IPO, UC Davis.

Prepared by Blaine Hanson, Maria Paz Santibanez, Nick Madden and Megan Mayzelle, 2013.

Reference: Estimating soil moisture by feel and appearance, USDA

For more information visit: <http://ip.ucdavis.edu>

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