

Table 3-1 Critical periods for plant moisture stress

Crop	Critical period	Comments
Alfalfa hay	At seedling stage for new seedlings, just after cutting for hay, and at start of flowering stage for seed production.	Any moisture stress during growth period reduces yield. Soil moisture is generally reduced immediately before and during cutting, drying, and hay collecting.
Beans, dry	Flowering through pod formation.	Sensitive to over-irrigation.
Beans, green	Blossom through harvest.	
Broccoli	During head formation and enlargement.	
Cabbage	During head formation and enlargement.	
Cauliflower	During entire growing season.	
Cane berries	Blossom through harvest.	
Citrus	During entire growing season.	Blossom and next season fruit set occurs during harvest of the previous crop.
Corn, grain	From tasseling through silk stage and until kernels become firm.	Needs adequate moisture from germination to dent stage for maximum production. Depletion of 80% or more of AWC may be allowed during final ripening period.
Corn, silage	From tasseling through silk stage and until kernels become firm.	Needs adequate moisture from germination to dent stage for maximum production.
Corn, sweet	From tasseling through silk stage until kernels become firm.	
Cotton	First blossom through boll maturing stage.	Any moisture stress, even temporary, ceases blossom formation and boll set for at least 15 days after moisture again becomes available.
Cranberries	Blossom through fruit sizing.	
Fruit trees	During the initiation and early development period of flower buds, the flowering and fruit setting period (maybe the previous year), the fruit growing and enlarging period, and the pre-harvest period.	Stone fruits are especially sensitive to moisture stress during last 2 weeks before harvest.
Grain (small)	During boot, bloom, milk stage, early head development and early ripening stages.	Critical period for malting barley is at soft dough stage to maintain a quality kernel.

Table 3-1 Critical periods for plant moisture stress—Continued

Crop	Critical period	Comments
Grapes	All growth periods especially during fruit filling.	See vine crops.
Peanuts	Full season.	
Lettuce	Head enlargement to harvest.	Water shortage results in a sour and strong lettuce. Crop quality at harvest is controlled by water availability to the plant, MAD 15 – 20% is recommended.
Melons	Blossom through harvest.	
Milo	Secondary rooting and tillering to boot stage, heading, flowering, and grain formation through filling.	
Onions, dry	During bulb formation.	Maintain MAD 30 – 35% of AWC. Let soil dry near harvest.
Onions, green	Blossom through harvest.	Strong and hot onions can result from moisture stress.
Nut trees	During flower initiation period, fruit set, and midseason growth.	Pre-harvest period is not key because nuts form during midseason period.
Pasture	During establishment and boot stage to head formation.	Maintain MAD less than 50%. Moisture stress immediately after grazing encourages fast regrowth.
Peas, dry	At start of flowering and when pods are swelling.	
Peas, green	Blossom through harvest.	
Peppers	At flowering stage and when peppers are in fast enlarging stage.	
Potato	Flowering and tuber formation to harvest.	Sensitive to irrigation scheduling. Restrict MAD to 30 – 35% of AWC. Low quality tubers result if allowed to go into moisture stress during tuber development and growth.
Radish	During period of root enlargement.	Hot radishes can be the result of moisture stress.
Sunflower	Flowering to seed development.	

Table 3-1 Critical periods for plant moisture stress—Continued

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Sorghum grain	Secondary rooting and tilling to boot stage, heading, flowering, and grain formation through filling.	
Soybeans	Flowering and fruiting stage.	
Strawberries	Fruit development through harvest.	
Sugar beets	At time of plant emergence, following thinning, and about 1 month after emergence.	Frequent light applications during early growth period. Temporary leaf wilt on hot days is common even with adequate soil water content. Excessive fall irrigation lowers sugar content, but soil moisture needs to be adequate for easy beet lifting.
Sugarcane	During period of maximum vegetative growth.	
Tobacco	Knee high to blossoming.	
Tomatoes	When flowers are forming, fruit is setting, and fruits are rapidly enlarging.	
Turnips	When size of edible root increases rapidly up to harvest.	Strong tasting turnips can be the result of moisture stress.
Vine crops	Blossom through harvest.	
Watermelon	Blossom to harvest.	