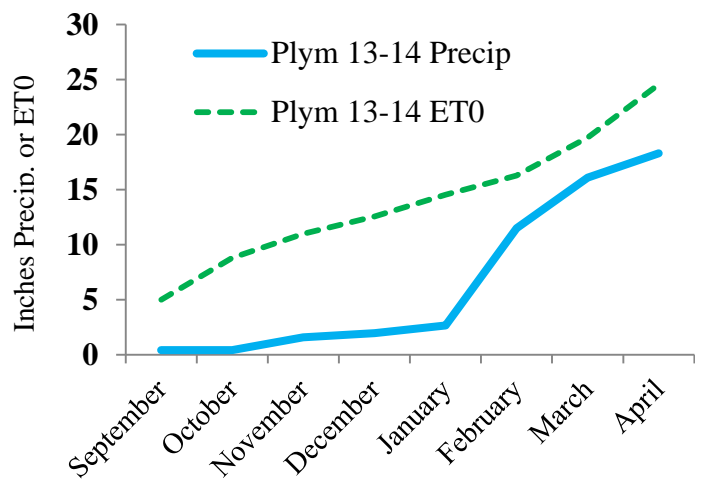
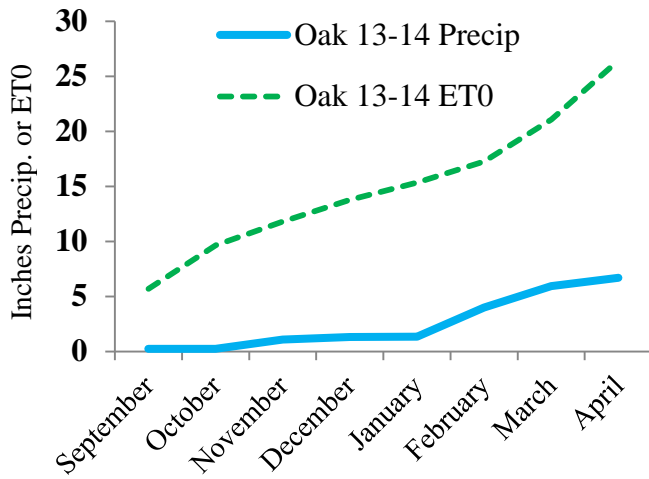


Cover Cropping and Drought

All cover crops use water! The water use and potential for cover crops to compete with the crop for water depends on:

- Climate (evaporative demand or ET)
- Rainfall
- Size of cover (surface area)
- How it is managed

Comparison of monthly cumulative ET_o and monthly cumulative precipitation in the 2013-2014 cover crop season (Sept-April) from local CIMIS stations, Oakdale (#194) and Plymouth (#227).



From: "Irrigation Management for the Sierra Nevada Foothills of California", 1981. Bethell, D., et.al.

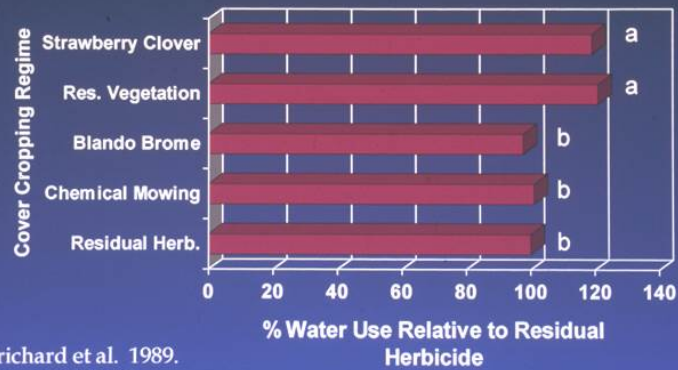
How many gallons? 1 ac-inch= 27,154 gallons. Example: South slope at 2500-3000 feet. Assume 6*10 vine spacing (726 vines/ac). Assume no effective rainfall.

With perennial cover crop: 20 ac-in *27154 gal/ac-in=543,000 gal/ac/726 vines= 748 gal/vine/season.
Without perennial cover crop: 13 ac-in*27154 gal/ac-in=353,002 gal/ac /726 vines=486 gal/vine/season.

Elevation	Inches of Water Required Per Season			
	South Slope		North Slope	
	Covercrop	No Cover	Covercrop	No Cover
500 -1000	- - - - - No Data Collected - - - - -			
1000-1500	31	22	26	19
1500-2000	26	18	21	14
2000-2500	22	15	17	12
2500-3000	20	13	15	10
3000-3500	15	10	12	7
3500-4000	- - - - - No Data Collected - - - - -			

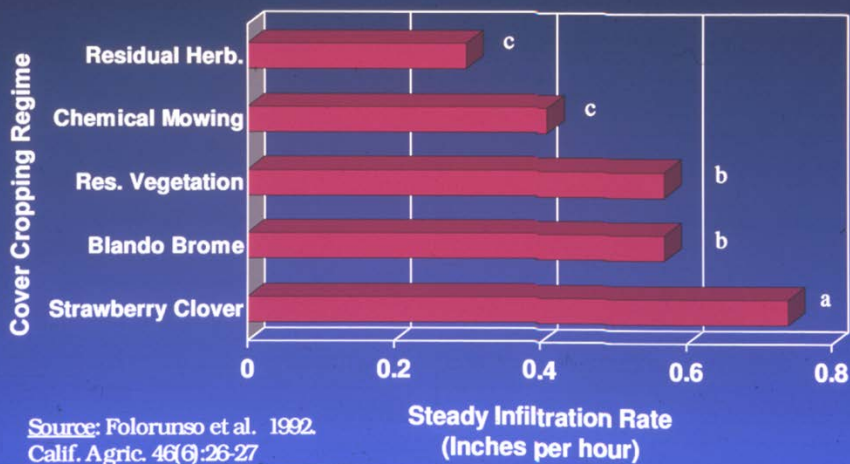
Table 6. Estimates of vineyard water use as they relate to the site factors of elevation, slope direction and covercrop practice.

Effects of Cover Crops On Water Use



Source: Prichard et al. 1989.
Calif. Agric. 43(4):23-25

Cover Crops Affect Water Infiltration



Source: Folorunso et al. 1992.
Calif. Agric. 46(6):26-27

Cover cropping during drought strategies

1. Plant a species that matures early
2. Plan to till in the cover
3. Get in and out quickly – plow down before bud break
4. Plant every other row
5. Keep a wide strip “clean” (without cover) so crop root zone doesn’t compete
6. Skip it this year