

Water Requirements for Various Agri-businesses in our area

This is a short comparison between various agri-businesses around Chehalem Mountain. Dry farming refers to crops that typically do not require irrigation and rely on rainfall, although these crops can be irrigated. Often, young plants such as young vineyards or orchards are irrigated only for the first few years and the more mature plants are entirely dry farmed. Fir trees (Christmas trees) and filberts (hazelnuts) may be irrigated when young saplings, and larger mature trees are dry farmed after the first couple of years. However, various other crops require more water and need irrigation which can lead to conflicts. Here are a few examples of water requirements for agribusinesses nearby.

- **Cannabis (and hemp, all outdoor):** estimated requirements are 0.21 gallons of water/square foot x 43,560 square feet/acre= 9,148 gallons of water/acre/day.
- **Alfalfa-** requires between 1.8 acre foot in a 180 day season to 3.2 acre foot per 200 day season. One acre foot = 325,851 gallons = 3,259-5,214 gallons of water/acre/day per season **
- **Vineyards (estimates for Oregon weather):** vineyards require 36-48 acre inches water in sandy soils and 10-30 acre inches on medium-heavy soils. (Grape Growers Handbook) so this calculates to 300,000- 500,000 gallons/acre/year = 1,369 gallons of water/acre/day.
- **Cows (dairy farm for estimates):** 1 dairy cow consumes 30-50 gallons water/day per Michigan State University. Cows usually require 1.5-2 acres/cow (Penn State University) so the range is 0.5-0.75 cows/acre x 50 gallons/day = 25 -37.5 gallons of water/acre/day
- **Horses (estimated for barns with turn out for exercise):** 6-10 gallons water consumed/horse/day. There are usually 1-2 horses/acre with turn out. So the range would be approximately 10-20 gallons of water/acre/day

* Indoor crops of Cannabis require less water: using controlled irrigation with recycling decreases the water requirements to 2.5-2.8 gallons/plant/day compared to 6 gallons of water/plant/day. (Watering Cannabis Plants: Your Ultimate Guide, Google)

** Washington State University Extension and University of Minnesota Extension. Pasture grass requires much less water than alfalfa.

water use per day

