

WATER MANAGEMENT for fruit trees & other plants

Horticulture Team/Arden Moore-Good



Do you know that a large apple tree, several summer days, will consume 50 gallons of water?

DAILY WATER USE in gallons per day (GPD)

Plant/Tree Size	ET by tree	1.0 to 1.5 inches available in early spring or late fall, 50% ET	1.0 to 1.5 inches available in early spring or late fall, 75% ET	1.0 to 1.5 inches available in early summer, 50% ET	1.0 to 1.5 inches available in early summer, 75% ET
1 to 2'	→	1.0	1.5	1.0	1.5
2 to 3'	→	1.5	2.0	1.5	2.0
3 to 4'	→	2.0	2.5	2.0	2.5
4 to 5'	→	2.5	3.0	2.5	3.0
5 to 6'	→	3.0	3.5	3.0	3.5
6 to 7'	→	3.5	4.0	3.5	4.0
7 to 8'	→	4.0	4.5	4.0	4.5
8 to 9'	→	4.5	5.0	4.5	5.0
9 to 10'	→	5.0	5.5	5.0	5.5
10 to 12'	→	5.5	6.0	5.5	6.0
12 to 14'	→	6.0	6.5	6.0	6.5
14 to 16'	→	6.5	7.0	6.5	7.0
16 to 18'	→	7.0	7.5	7.0	7.5
18 to 20'	→	7.5	8.0	7.5	8.0
20 to 24'	→	8.0	8.5	8.0	8.5
24 to 28'	→	8.5	9.0	8.5	9.0
28 to 32'	→	9.0	9.5	9.0	9.5
32 to 36'	→	9.5	10.0	9.5	10.0
36 to 40'	→	10.0	10.5	10.0	10.5
40 to 44'	→	10.5	11.0	10.5	11.0
44 to 48'	→	11.0	11.5	11.0	11.5
48 to 52'	→	11.5	12.0	11.5	12.0
52 to 56'	→	12.0	12.5	12.0	12.5
56 to 60'	→	12.5	13.0	12.5	13.0
60 to 64'	→	13.0	13.5	13.0	13.5
64 to 68'	→	13.5	14.0	13.5	14.0
68 to 72'	→	14.0	14.5	14.0	14.5
72 to 76'	→	14.5	15.0	14.5	15.0
76 to 80'	→	15.0	15.5	15.0	15.5
80 to 84'	→	15.5	16.0	15.5	16.0
84 to 88'	→	16.0	16.5	16.0	16.5
88 to 92'	→	16.5	17.0	16.5	17.0
92 to 96'	→	17.0	17.5	17.0	17.5
96 to 100'	→	17.5	18.0	17.5	18.0
100 to 104'	→	18.0	18.5	18.0	18.5
104 to 108'	→	18.5	19.0	18.5	19.0
108 to 112'	→	19.0	19.5	19.0	19.5
112 to 116'	→	19.5	20.0	19.5	20.0
116 to 120'	→	20.0	20.5	20.0	20.5
120 to 124'	→	20.5	21.0	20.5	21.0
124 to 128'	→	21.0	21.5	21.0	21.5
128 to 132'	→	21.5	22.0	21.5	22.0
132 to 136'	→	22.0	22.5	22.0	22.5
136 to 140'	→	22.5	23.0	22.5	23.0
140 to 144'	→	23.0	23.5	23.0	23.5
144 to 148'	→	23.5	24.0	23.5	24.0
148 to 152'	→	24.0	24.5	24.0	24.5
152 to 156'	→	24.5	25.0	24.5	25.0
156 to 160'	→	25.0	25.5	25.0	25.5
160 to 164'	→	25.5	26.0	25.5	26.0
164 to 168'	→	26.0	26.5	26.0	26.5
168 to 172'	→	26.5	27.0	26.5	27.0
172 to 176'	→	27.0	27.5	27.0	27.5
176 to 180'	→	27.5	28.0	27.5	28.0
180 to 184'	→	28.0	28.5	28.0	28.5
184 to 188'	→	28.5	29.0	28.5	29.0
188 to 192'	→	29.0	29.5	29.0	29.5
192 to 196'	→	29.5	30.0	29.5	30.0
196 to 200'	→	30.0	30.5	30.0	30.5

ET = evapotranspiration (water loss)

- Daily water use = total ET (Evapo-Transpiration) in inches per day.
- Soil type – to estimate water holding capacity (volume of water available to plants)
 - clay – use 6% of soil depth (volume 1.0 to 2.0% of water)
 - silt – use 5% of soil depth (volume 1.0 to 2.0% of water)
 - sand – use 0% of soil depth (volume 1.0 to 2.0% of water)
- Amount of water applied:
 - Chlorophyll-a index (transducer or leafy subject)
 - Soil water potential (SWP) – Place several SWP sensors in the specific pattern and measure values of SWP/ET.
- The area of plant canopy (square feet) [50] to 1000 sq. feet (1 acre)



