

Water Conversions & Application

Water Measures

| | | |
|---------------------------|---|--|
| 1 gallon | = | 8.34 pounds |
| 1 cfs flowing for 24 hrs. | = | 2 acre-feet |
| 1 ft of pressure head | = | Approximately .5 psi |
| 1 psi | = | Approximately 2 ft of head |
| 1 cfs | = | 450 gpm |
| 1 cubic foot | = | 62.4 pounds or 7.48 gallons |
| 1 second-foot | = | 1 cubic foot per second = 450 gallons per minute |
| 1 acre-inch | = | 27,154 gallons |
| 1 acre-foot | = | 325,850 gallons = 43,560 cubic feet |
| 1 acre-foot | = | ½ cubic foot per second for 24 hours |
| 1 acre-foot | = | 225 gallons per minute for 24 hours |

Amount of Water in Acre-Feet Applied to a Field

Using the Chart

To calculate the depth of water applied in feet, divide the total acre-feet by the number of acres in the field. To determine inches, multiply by 12. This will give you an average for the entire field, some areas will vary in actual application based on the uniformity of your irrigation methods.

Example: A 40 acre field receives 3 cfs for 6 hours. The total water applied to the field is 1.5 acre feet.

The depth of the water applied is:

Feet: $1.5 \div 40 = .0375$

Inches: $.0375 \times 12 = .45$

| Hours | Flow Rate, CFS | | | | | | | | | |
|-------|----------------|-----|-----|-----|-----|------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | .1 | .2 | .2 | .3 | .4 | .5 | .6 | .7 | .7 | .8 |
| 2 | .2 | .3 | .5 | .7 | .8 | 1 | 1.2 | 1.3 | 1.5 | 1.7 |
| 3 | .2 | .5 | .7 | 1 | 1.2 | 1.5 | 1.7 | 2 | 2.2 | 2.5 |
| 4 | .3 | .7 | 1 | 1.3 | 1.7 | 2 | 2.3 | 2.6 | 3 | 3.3 |
| 5 | .4 | .8 | 1.2 | 1.7 | 2.1 | 2.5 | 2.9 | 3.3 | 3.7 | 4.1 |
| 6 | .5 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 7 | .6 | 1.2 | 1.7 | 2.3 | 2.9 | 3.5 | 4 | 4.6 | 5.2 | 5.8 |
| 8 | .7 | 1.3 | 2 | 2.6 | 3.3 | 4 | 4.6 | 5.3 | 6 | 6.6 |
| 9 | .7 | 1.5 | 2.2 | 3 | 3.7 | 4.5 | 5.2 | 6 | 6.7 | 7.4 |
| 10 | .8 | 1.7 | 2.5 | 3.3 | 4.1 | 5 | 5.8 | 6.6 | 7.4 | 8.3 |
| 11 | .9 | 1.8 | 2.7 | 3.6 | 4.5 | 5.5 | 6.4 | 7.3 | 8.2 | 9.1 |
| 12 | 1 | 2 | 3 | 4 | 5 | 6 | 6.9 | 7.9 | 8.9 | 9.9 |
| 13 | 1.1 | 2.1 | 3.2 | 4.3 | 5.4 | 6.4 | 7.5 | 8.6 | 9.7 | 10.7 |
| 14 | 1.2 | 2.3 | 3.5 | 4.6 | 5.8 | 6.9 | 8.1 | 9.3 | 10.4 | 11.6 |
| 15 | 1.2 | 2.5 | 3.7 | 5 | 6.2 | 7.4 | 8.7 | 9.9 | 11.2 | 12.4 |
| 16 | 1.3 | 2.6 | 4 | 5.3 | 6.6 | 7.9 | 9.3 | 10.6 | 11.9 | 13.2 |
| 17 | 1.4 | 2.8 | 4.2 | 5.6 | 7 | 8.4 | 9.8 | 11.2 | 12.6 | 14 |
| 18 | 1.5 | 3 | 4.5 | 6 | 7.4 | 8.9 | 10.4 | 11.9 | 13.4 | 14.9 |
| 19 | 1.6 | 3.1 | 4.7 | 6.3 | 7.9 | 9.4 | 11 | 12.6 | 14.1 | 15.7 |
| 20 | 1.7 | 3.3 | 5 | 6.6 | 8.3 | 9.9 | 11.6 | 13.2 | 14.9 | 16.5 |
| 21 | 1.7 | 3.5 | 5.2 | 6.9 | 8.7 | 10.4 | 12.1 | 13.9 | 15.6 | 17.4 |
| 22 | 1.8 | 3.6 | 5.5 | 7.3 | 9.1 | 10.9 | 12.7 | 14.5 | 16.4 | 18.2 |
| 23 | 1.9 | 3.8 | 5.7 | 7.6 | 9.5 | 11.4 | 13.3 | 15.2 | 17.1 | 19 |
| 24 | 2 | 4 | 6 | 7.9 | 9.9 | 11.9 | 13.9 | 15.9 | 17.9 | 19.8 |