AGRICULTURE WATER USE

How to get the most from each gallon

REDUCTION IN OVERALL WATER USE PER CROP

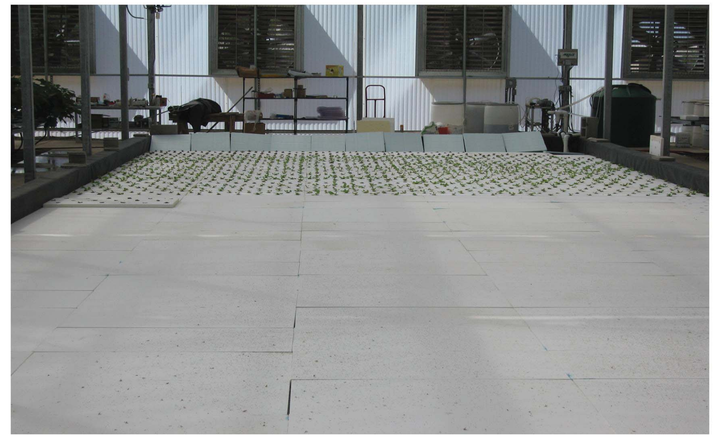
Concentrated hydroponic systems have the ability to deliver the precise amount of water needed at the right time. This system reduces overall water use by eliminating irrigation runoff, excess water in the root zone the need to flood or “flush” high salt build up in the soil. The
two most common types of systems are point-to-point and recirculation.
In re-circulating systems, water that is not absorbed by the roots is re-circulated through the system for use again.
In point-to –point, a precise amount of water is delivered to the root zone on given intervals, usually every few minutes.
EXAMPLE: Traditional flood irrigated lettuce uses between 50-60 gallons of water per head. Floating lettuce systems use 1-2 gallons of water per head which equals over 30,000 acre feet of water savings for Arizona alone.

INCREASE YEILDS PER GALLON

Hydroponic raft systems allow more efficient means of irrigating crops. Water and nutrients are combined and delivered to the roots exactly when needed increasing the percentage of actual water use per plant per irrigation.
EXAMPLE: Traditional field grown lettuce flood irrigated . One acre of lettuce produces an average of 35,000 head/ season using approximately3 acre feet of water or .03 head/gallon. Floating hydroponic systems produce 1 head/ gallon of water – an increase in production by 3000%
Hydroponic systems can grow 1.1Million head of lettuce with the same the same water it takes to grow 35,000 (1 ACRE) traditional application.

DECREASE IN WASTE WATER RUN-OFF

Embedded in the high water use is high fertilizer use for field crops resulting in waste water management and riparian protection areas.
With efficient hydroponic application run-off is essentially eliminated or easily recycled since the volume of water is reduced and the percentage used by the plant is increased.



INCREASE IN DOLLAR RETURN PER GALLON OF WATER

When comparing monetary return for water use the following high water use
For every gallon of water used to irrigate cotton, an average of $0.001 goes to the grower. For every gallon of water used to irrigate hydroponic tomatoes. $0.300 goes to the grower. Additionally the cost of nutrients is decreased bringing the rate to <$0.30 (University of Arizona Introduction to controlled Environment Hydroponics.)
For every gallon of water used in field grown lettuce production the grower gets $0.004. For each gallon in hydroponic floating lettuce systems the grower gets $0.252

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