

WATER INTAKE

1 inch of rainfall provides over 27,000 gallons of water per acre

- A high-yielding corn crop moves 20-26 inches of water.
- In a corn crop yielding 200 bushels per acre:
 - 1 gallon of water moves with the harvested bushel of grain,
 - 2 gallons of water remain with the stalks/stover in the field, and
 - the balance of the water is returned to the water cycle.

SUPPLEMENTAL WATER



Rainfall is the sole source of water for 85% of the U.S. corn acres

- Irrigated corn only occupies 15% of total U.S. corn acres.
- Corn represents 21% of total U.S. irrigated acres, but only 7% of total irrigation water withdrawals.
- From 1987-2007, the volume of irrigation withdrawals for corn decreased by 27%.
- As supplemental watering (irrigation) increases, so does the corn yield (up to 30%), but only to the point where the water need is met.

WATER RETURN

Corn returns 4,000 gallons of water daily to the natural water cycle through the processes of evaporation (soil) and transpiration (plant)

- On a hot day, evapotranspiration (ET) can reach 8,000 gallons per acre.
- Evaporation accounts for 20-30% and transpiration 70-80% of total ET.
- Residue on the soil surface may reduce annual water needs more than 80,000 gallons per acre.



**WATER MOVEMENT
IN CORN PRODUCTION**



WATER UTILIZATION



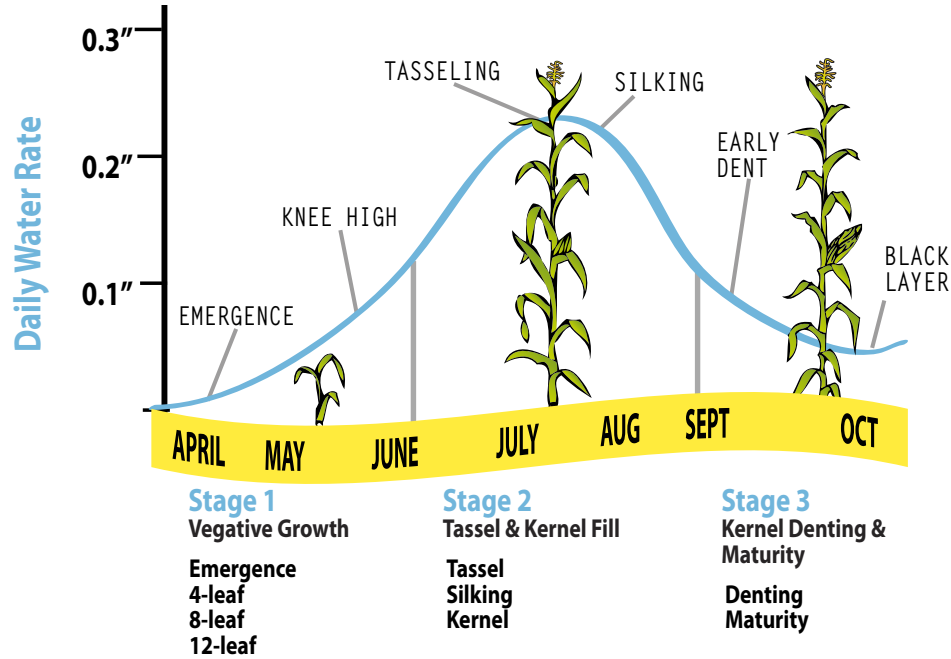
Water Return (leaves)

- Water carries nutrients throughout the corn plant.
- Small openings in the leaf emit water back to the atmosphere.

Water Intake (roots)

- Water and nutrients are moved from the soil by the root system.
- Water transports the nutrients from the root system to the above-ground portion of the corn plant.

GROWTH



WATER CYCLE

