Irrigated agriculture makes up 72% of Arizona’s water use.

**Water applied to crops** is consumed mainly by evapotranspiration or “ET” – evaporation plus transpiration.

- Evaporation – when liquid water on the surface or in the soil transforms to water vapor
- Transpiration – when liquid water taken up by plants is ‘exhaled’ as water vapor (Plants ‘breathe in’ CO\(_2\) and ‘breathe out’ O\(_2\) and water vapor.)
- ET can be calculated from satellite data.

**ET is an essential variable** for calculating crop water needs. It depends on many factors, including local climate and crop type.

- \( ET = ETo \times Kc \)
  - \( ETo \) – Reference ET for a specific location dependent on local climate factors like temperature, humidity, and wind.
  - \( Kc \) – The ET coefficient unique to each crop at different growth stages.

**Water is also used to leach** away the salt left behind when water evaporates, because salinity reduces a plant’s ability to extract water and nutrients from soil.

- Removing salt from irrigated fields is a significant portion of farmers’ water use.
- Leaching water carries salt down below the root zone and may reach the aquifer.