# Consumptive Use & Irrigation

Colorado Ag Water Alliance

## Flood

100%

0%

Part of the water applied in flood irrigation will leave a field through **Deep Percolation** and **Surface Water Runoff**. This water will be reused downstream.

Some of the water applied will also **Evaporate** from the field. This is considered a loss to the system.

Flood irrigation water is also consumed by **non-crop plants** along ditches and around the edges of fields.

**Consumptive Use**

It can vary widely, but on average **50%** of water applied through flood irrigation will be consumed by the crop.

## Sprinkler

100%

0%

In sprinkler irrigation, **Deep Percolation** and **Surface Water Runoff** may occur. **Evaporation** will likely occur and may be even higher than flood irrigation.

**Consumptive Use**

It can vary widely, but **65% to 90%** of water applied through sprinkler irrigation will be consumed by the crop.

**Why did it go up?**

Water is now being applied more efficiently. With flood irrigation, some of the crop may be receiving more water than it can consume at a given time, but also some of the crop may not be receiving enough water.

Now, the timing and amount of water applied on a crop is optimized with a sprinkler.

**Consumptive Use** is the water that is **evaporated** from soils and open water surfaces like ditches, and the water **transpired** by plants. Most of the water absorbed by plants is actually **transpired**, or given off as water vapor through their stomata, or pores.

**Less capital investment**

**Replenishes groundwater and aquifers**

**Flushes soils of dissolved salts**

**Increases production and yields**

**Less labor**

**Reduces salinity loading into streams**

Sources: Colorado Water Institute Completion Report no. 232 Part 5, Colorado State University. *Meeting Colorado's Future Water Supply Needs; Opportunities and Challenges Associated with Potential Agricultural Water Conservation Measures*, Colorado Agricultural Water Alliance. Impact of Agricultural Water Conservation on Water Availability, Clemmens & Allen (2005). Conservation Potential of Agricultural Water Conservation Subsidies, Huffaker (2008). Methods and Technologies to Improve Efficiency of Water Use, Evans & Sadler (2008)