

AWSE Spring Workshop

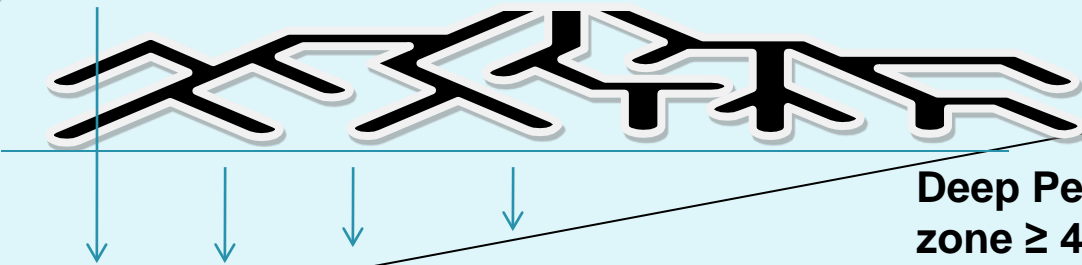
Kansas Consumptive Use Evaluation

by
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and
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Flood Irrigation schematic

Evaporative loss 5%

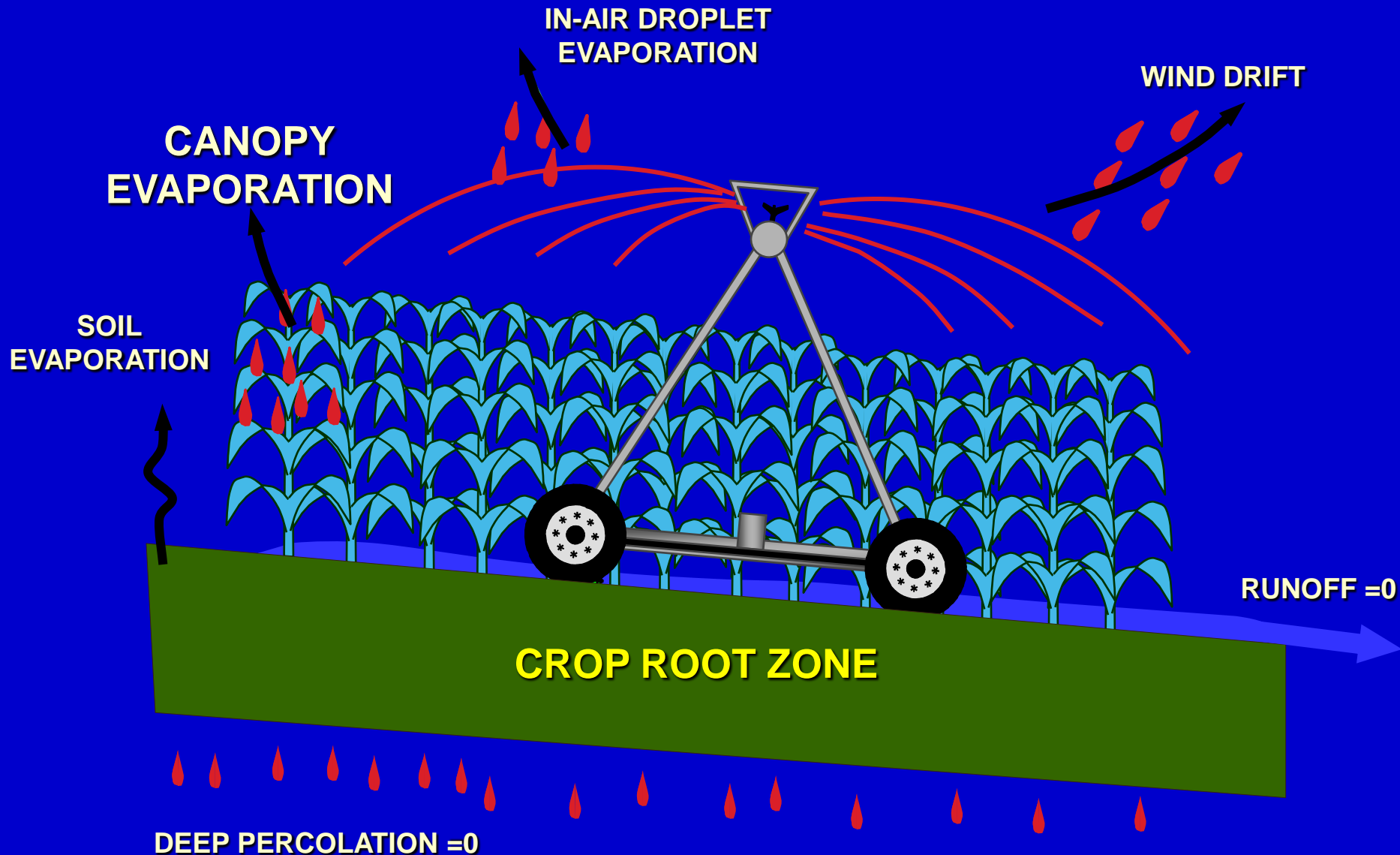
Field Run off 5%



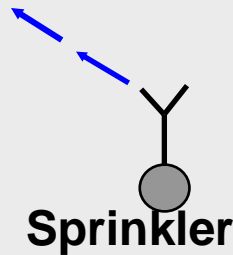
Deep Percolation below the root zone $\geq 40\%$

Total water used by the crop 50%; Losses to the water table aquifer 60%;

Understand where the water losses are



Sprinkler Loss



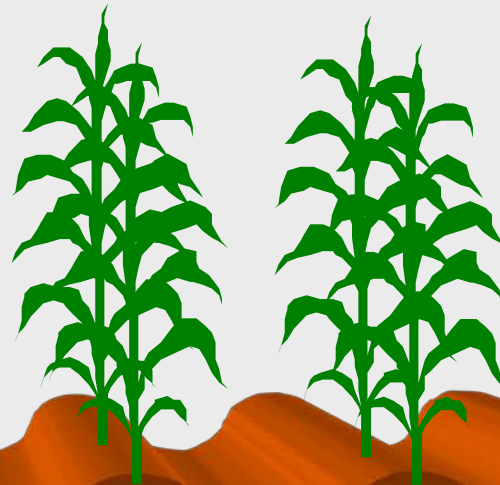
Application Efficiency = 85%

Air Drift & Air Evaporation = 3%

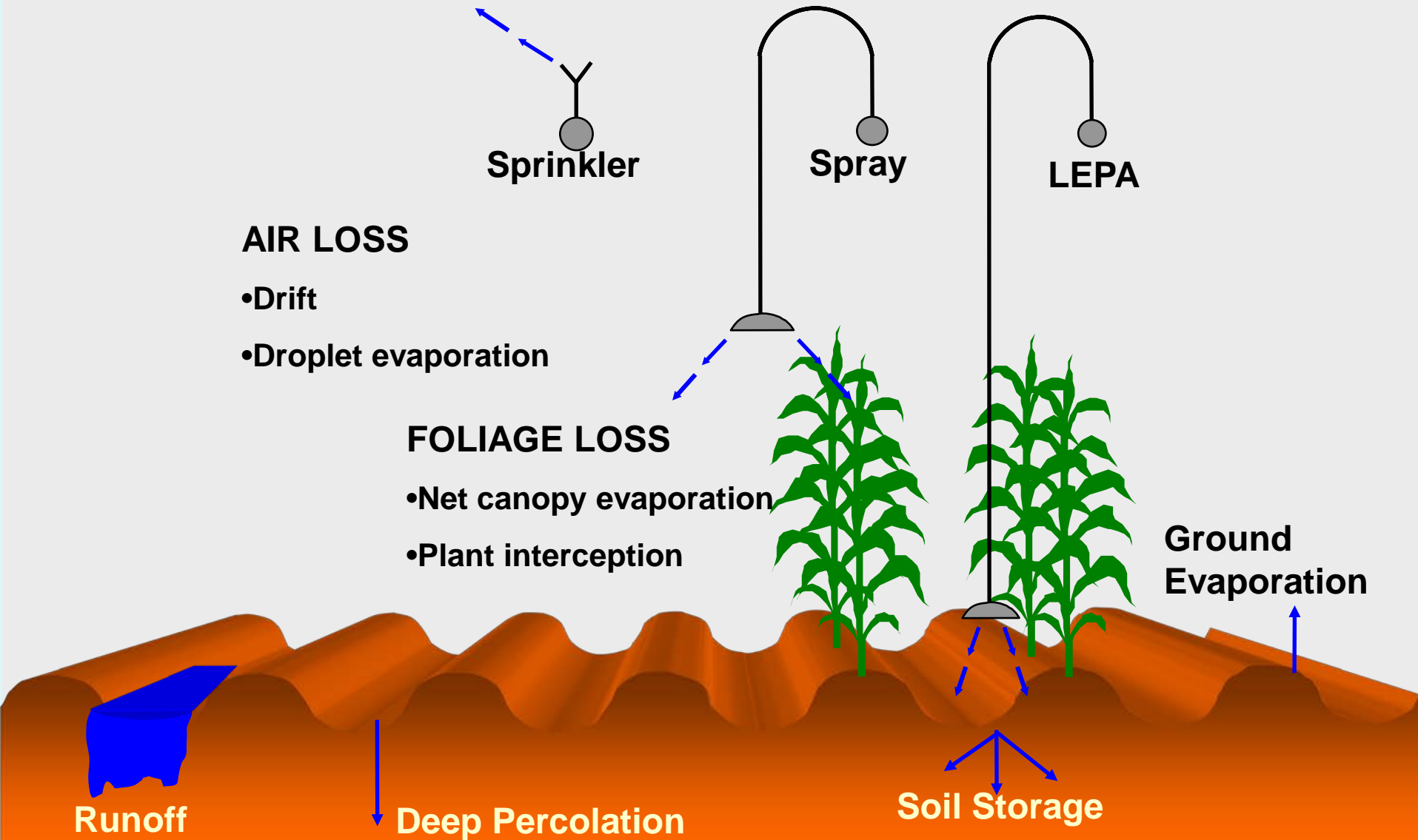
Net Canopy Evaporation = 8%

Plant Interception = 4%

Total Loss = 15%

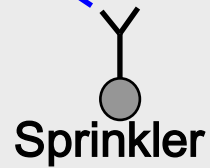


Water Losses

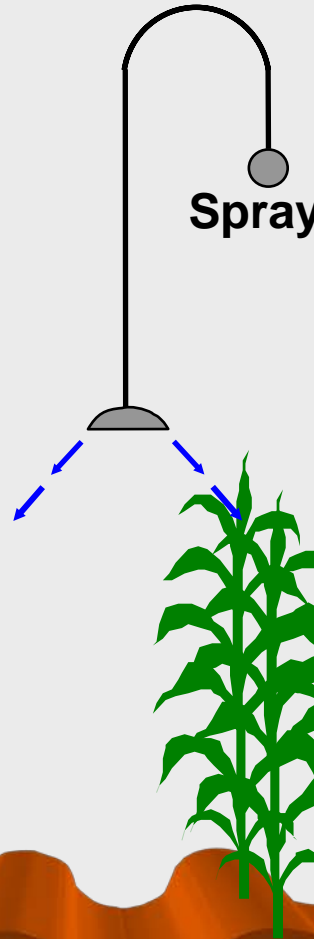


Water Losses

App. Efficiency = 85%

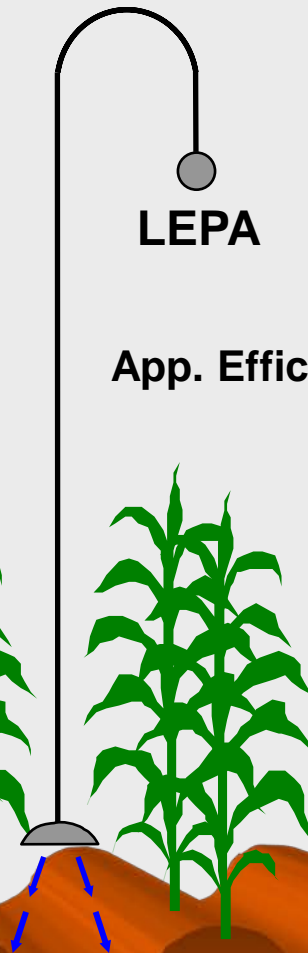


App. Efficiency = 92%

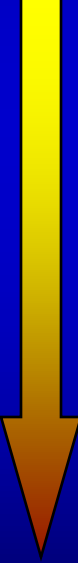


LEPA

App. Efficiency = 98%



Potential WaterApplication Efficiencies

Sprinkler/nozzle Type	Application Efficiency	Runoff Potential
High Pressure Impact	80-85	 Low
Low Pressure Impact	82-85	
Low Pressure Spray (on top of pipeline)	85-88	
Low Pressure Spray (truss rod height)	87-92	
Low Pressure Spray (3-7ft off the ground)	90-95	
Low Pressure Spray (LEPA bubble mode)	95-98	High

Changes in Water Rights

- ◉ Any owner of a water right may change the place of use, point of diversion or the use made of the water, without losing priority of right...
- ◉ Apply in writing
- ◉ Change is reasonable
- ◉ Relates to same source of supply
- ◉ Receives approval

Changing use made of water to another type of use

- The approval of a change in the use made of water from irrigation use to any other type of beneficial use shall not be approved if it will cause the net consumptive use from the local source of water supply to be greater than the net consumptive use from the same local source of water supply by the original irrigation use. (K.A.R. 5-5-9)

Consumptive Use

- K.A.R. 5-5-3 Change in Consumptive Use
The extent of consumptive use shall not be increased substantially after a vested right has been determined or the time allowed in which to perfect a the water right has expired...
- Consumptive use meaning gross diversion minus:
 1. 'Waste' of water
 2. Return flows to the source of water supply
 3. Through surface water runoff which is not wasted; and
 4. by deep percolation

Example changing an irrigation water right to a new use

- The maximum quantity of water to be allowed by the change shall be the net irrigation requirement (N.I.R.) for the 50% rainfall for that county X maximum acreage legally irrigated.
- EXAMPLE:
- Finney County- N.I.R. = 1.21'
- Example water right authorizes 130 acre center pivot and 260 AF of quantity per calendar year.
- 130 acre pivot X 1.21' = 157 AF to convert to new use (industrial, municipal, etc)

Questions?

