

Ag Talk with Jeanne

Crop Water Allocator: Western Kansas-based decision making tool for limited irrigation

By Jeanne Falk,
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Where irrigation water is limited, irrigators have difficult decisions to make about which crops to grow and what rotation systems will work best. Crop yields at various water amounts, production costs, and crop prices all figure into the decision.

A good decision-making tool to help sort out these choices for western Kansas conditions is the Crop Water Allocator, developed by K-State engineers and agronomists. The Crop Water Allocator program can be downloaded from www.mobileirrigationlab.com. In addition, CDs can be ordered at the Extension Office.

The data for the yield vs. irrigation and precipitation calculations were developed from field research plots using conventionally tilled management in western Kansas, which is why it is best used by irrigators specifically in that region.

The allocator calculates net economic returns from many combinations of crops and irrigation allocations among crops, then ranks the net returns from maximum to minimum values. Users can select a range of input variables such as rainfall, production costs, commodity prices, irrigation costs, irrigation efficiency and maximum yields.

The user needs to enter input values for the execution of Crop Water Allocator: geographic location, soil type, irrigation costs, irrigation application efficiency, annual precipitation, annual irrigation amount, land split, commodity price, and maximum yield. Crop production costs can come from the allocator user or from the software's internal default production costs from Kansas State University's agricultural economists (www.agmanager.info).

The allocator determines crop yields from irrigation and precipitation (11 to 24 in.) for alfalfa, corn, soybean, grain

sorghum, wheat, and sunflower. The Crop Water Allocator assumes that production inputs other than irrigation do not limit yields. Crop management that does not meet best management practices criteria will not achieve the predicted results of applicator.

The user of allocator can choose a rotation scheme for five possible land splits:

- 50 percent to 50 percent, 75 percent to 25 percent, 33 percent to 33 percent to 33 percent, 50 percent to 25 percent to 25 percent, or 25 percent to 25 percent to 25 percent to 25 percent.

The user can choose one land split for each execution of the Crop Water Applicator or hold land split constant as other inputs are changed. The program will assign every combination of every selected crop to each part of the land split.

More crops than land splits can be selected for applicator analysis. One crop may be in more than one part or in all parts of the rotation. The applicator then allocates water to each crop in each combination of selected crops for the rotation.

Net return results from all combinations of crops in each part of the rotation and irrigation are "stacked" from maximum to minimum. The user can scroll through approximately 20 of the largest net return results displayed on the output screen. Some of the crop combinations in the rotation may not be feasible for users even though certain crops have more net return than others. For example, soybean in all parts of the rotation would not be feasible because continuous soybean is not recommended.

In addition to choosing combinations of crops for rotation, decisions about how much water to apply to each crop comes into play. For example, corn needs to be irrigated to full yields because of the high economic return whereas other crops in the rotation such as sorghum and wheat can receive limited water and still respond well.



LOTS GOING ON AT THE DAIRY — A worker welds fence at the Bird City Dairy.

Times staff photo by Tim Burr

Public can get rid of unwanted medications

On Oct. 29 From 10 a.m. to 2 p.m. the Cheyenne County Sheriff's office and the Drug Enforcement Administration (DEA) will give the public an opportunity to prevent pill abuse and theft by ridding their homes of potentially dangerous expired, unused and unwanted prescription drugs.

Bring your medications for disposal to the Emergency Building in St. Francis or the Fire House in Bird City, said Sheriff Craig Van Allen. The service is free and anonymous, no questions asked.

Last April, Americans turned in 376,593 pounds—188 tons of prescription drugs at nearly 5,400 sites operated by the Drug

Enforcement Agency and more than 3,000 state and local law enforcement partners.

This initiative addresses a vital public safety and public health issue. Medicines that languish in home cabinets are highly susceptible to diversion, misuse, and abuse.

Rates of prescription drug abuse in the U.S. are alarmingly high, as are the number of accidental poisonings and overdoses due to these drugs. Studies show that a majority of abused prescription drugs are obtained from family and friends, including from the home medicine cabinet.

In addition, Americans are now

advised that their usual methods for disposing of unused medicines—flushing them down the toilet or throwing them in the trash—both pose potential safety and health hazards.

Four days after the first take-back event in September 2010, Congress passed the Secure and Responsible Drug Disposal Act of 2010, which amends the Controlled Substances Act to allow an "ultimate user" of controlled substance medications to dispose of them by delivering them to entities authorized by the Attorney General to accept them.

Items allowed
Controlled, non-controlled, prescription and over the counter

medications will be collected. Tablets, capsules, all other solid dosage forms and liquids in consumer containers will be accepted.

No syringes or needles will be accepted. Liquids should remain sealed in their original container with the cap tightly sealed to prevent leakage. Participants are encouraged to remove or black out any identifying information from the prescription label. This service is free and anonymous, no efforts will be made to count, log, or inventory the medications. No requests for information or identification will be made.



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