

Center pivot irrigation.. problem or solution?

By KEN TURNER

Automatic continuous moving center pivot irrigation systems do save labor and give good application uniformity. These two values make them the most popular irrigation system today.

On silt loam soils with low intake rates on sloping sites, the center pivot system has severe problems and limitations.

SCS personnel did several sprinkler system evaluations last summer on Ritzville silt loam soils. They found that the center pivot systems commonly apply water at a rate of up to one inch per hour. Unfortunately, the intake rate of the Ritzville silt loam is only 0.25 inches per hour. In essence, this means that as much as three-fourths of the water can be lost through runoff and evaporation.

Erosion from run-off and wheel track ruts are a big drawback. A reduction in irrigation efficiency occurs with run-off, water accumulation in low areas and crustings of the soil surface.

Increasing the application rate only accelerates run-off, while the soil profile remains dry. This is caused by the application rate exceeding the intake rate. This is an inherent condition in a continuous moving lateral.

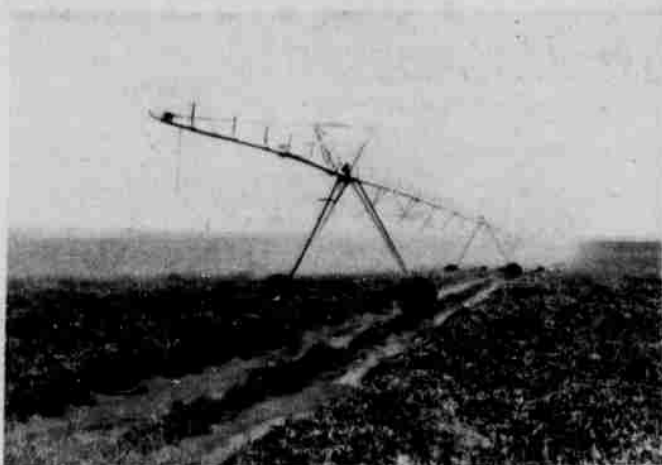
There are several solutions to the problem. The length of the lateral can be shortened, thereby eliminating the high application rate on the outer end of the system. This will, however, reduce the amount of acres irrigated, but will considerably reduce run-off. The amount of water that is pumped through the system can also be decreased and the speed that the lateral moves can be increased. Increasing the speed of the system is one of the better ways to reduce run-off, within limits. It must be remembered, however, that when the speed is increased a higher percentage of water is lost through evaporation.

Management of these center pivot systems is very critical. The management that you apply is probably more important than the brand of sprinkler system that you purchase. Operators should

strive to have as little "down" time as possible. Prior to the growing season every irrigator should be certain that the ENTIRE soil profile is filled with water. This factor is of utmost importance. The soil profile must be used as a reservoir since the plant will use more water during mid-summer than the system can

apply.

When "down" time occurs due to harvest or breakage the plant continues to use the available water in the soil. Therefore, under these summertime conditions it becomes impossible to "catch up" with a center pivot irrigation system.



Excessive water application from center-pivot irrigation systems frequently causes costly runoff.

The Farm Bureau says—

We support the use of Soil Conservation Service technical staff for assistance in planning programs having permanent value.

Soil Conservation Districts should retain authority and responsibility and should not surrender them to state or federal agencies, but should use these agencies solely for technical service.

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