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**PIVOT MAINTENANCE REALLY PAID OFF THIS YEAR**

I cannot think of very many times in our area where crop yields were as sensitive as they were this year to maintenance issues with our pivots. Problems frequently occur in management of center pivots. Some of the issues include lack of knowledge of how much water was applied, sprinkler issues that reduce uniformity or efficiency, inappropriate pressure, runoff due to wrong sprinkler package or system operation, lack of monitoring or system capacity is too low for the crop need.

Following is an excellent check list to perform next spring after threat of freeze is over. Many producers already know what needs to be fixed. Even if you didn't have a problem this year, the following checklist is an excellent one to remember for future pivot maintenance.

1. Obtain the sprinkler chart for your center pivot and ensure that the package was installed properly. Check with your dealer for a replacement copy if the sprinkler chart has been lost.

2. Determine if system capacity is adequate for your location, check NebGuide G1854 at http://www.ianrpubs.unl.edu/pages/publicationD.jsp?publicationId=1005. There are examples I have heard in Saline County where we have changed from a furrow irrigated well to a center pivot system and the tenant had problems this year with the corn yield. In this case the landlord needs to upgrade the well to a more efficient setup and one that will properly apply water in a drought year calibrated to the pressure setting with a pivot.

3. Ensure that pump and pivot are properly matched. Make sure that the engine and pump speeds are correct for needed voltage or hydraulic pressure and for pressure at the pivot inlet, as well as for engine performance.

4. Buy a good pressure gauge and operate the center pivot system at the designed pressure. It is also a good idea to install a pressure gauge at the distal end of the pivot. Periodically check the pressure at the far end of the pivot at its highest elevation. Pressure should be at least 5 psi above your pressure regulator rating.

5. Operate the system when crops are small next spring and look for broken or plugged sprinklers or pressure regulators and leaks. If you have questions about the suitability of the existing sprinkler/regulator package, you can install a new regulator and sprinkler (with the proper nozzle) in the middle of each span and observe any differences between performance of new components and existing devices.

6. Observe water application in the outermost span on the steepest portion of the field and the soils with the lowest infiltration rate to see if you have runoff problems. If runoff problems exist:

• Reduce the application depth.
• Use reduced tillage or continuous no-till to improve water infiltration and to enhance surface storage.
• Eventually evaluate if a different sprinkler package is necessary. Select sprinkler devices that provide at least as much wetted diameter as required in selection procedure.
• Select devices with large droplet sizes when renozzling. Silty clay loam soils are much different compared to fine sandy loam.

7. Routinely maintain mechanical/electrical/hydraulic components.

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