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CONDUCT A PRE-SEASON CHECKUP FOR MAXIMUM IRRIGATION PERFORMANCE

A pre-season checkup is an essential part of regular irrigation equipment maintenance. Without it, worn components can result in less uniform water application, increased energy use and untimely breakdowns.

In order to reduce the risk of untimely breakdowns, worn components should be identified and replaced prior to the irrigation season. One of the best ways to identify worn components such as sprinklers, pumps or irrigation systems is to keep good records. Monthly records of outlet pressure, flow rate and energy use is an excellent means of evaluating pump and motor performance. Remember to record such information when the pivot is in the same field position each time. Otherwise, the pump will produce different outlet pressures depending on whether the system faces uphill or downhill.

Prior to the first irrigation, individual systems will have a number of areas to lubricate or parts that may need to be replaced. The following list can be used as a guide.

* Change engine oil and filter.

* Replace air and fuel filters.

* Grease drive shafts on pump and motor.

* Check spark plugs on gas, propane or natural gas motors.

* Drain, flush and refill cooling system.

* Refill drip oil reservoir and allow about one gallon of oil to drain into drip line.

* Ensure gear drive is free moving and clean and lubricate non-reverse pins.

* Run motor at 1,000 rpm for 45 minutes.

* Walk along system to look for malfunctioning sprinklers.

* Check chemigation pump and safety equipment operation.

* Check and replace cracking hoses.

Each irrigation system is equipped with a number of safety switches to shut the system down in case of failure. Take time to ensure these controls function properly before these failures occur. Run the system through a series of conditions that would cause each safety control to function.

Now more than ever, pumping costs should be evaluated to determine if excess energy is being used. The Nebraska Pumping Plant Performance Criteria (NPPPC) was developed to provide a benchmark of the energy use one can reasonably expect a well-designed pumping plant (pump, motor, gearhead, etc.) to use when pumping water into an irrigation system. Comparing current system performance to the NPPPC will determine if excess energy is being used.

Sprinkler wear depends on the quality of the water and system operating pressure. As a rule of thumb, sprinkler replacement should be considered after 10,000-12,000 hours of operation. If it is time to replace sprinklers or nozzles, be sure to obtain a new sprinkler package design or replace them with the ones listed on the original sprinkler package print-out.

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