D. O. Nelson Is True Believer in Sprinkler Irrigation

By KIT ANDERSON

D. O. Nelson is a believer in irrigation.

It made it possible for him to grow potatoes on land that several years ago wasn't even supposed to be good enough for dryland wheat.

In fact, a land board had recommended that Nelson not farm the ground.

This week, he was to finish a potato harvest that he hoped would yield more than 20 tons per acre.

Irrigation made it possible.

It all started back in July of 1967, when Nelson contracted a well driller to drill on the Nelson-Tucker ranch near the Boardman Bombing range, of which he is half-owner.

The well was successful, to say the least, but not until the driller had gone 1,000 feet underground.

It was then that water came from the hole in great amounts. First tests indicated from 1,300 to 1,700 gallons per minute, but on a third test, 2,800 gallons per minute came from the well.

Nelson uses a 400-horsepower diesel engine to pump the well, which is 16 inches in diameter.

That amount of water was estimated then to be able to irrigate two sections of wheat, or a lesser amount of row crops, using sprinkler irrigation.

As a matter of fact, it now irrigates two fields of potatoes, totaling 237 acres, as well as two sections of wheat.

Or, if he chooses, Nelson can use four sections of sprinklers on wheat instead of the potato crop.

For irrigating the potatoes, Nelson uses two Raincats, electrically propelled sections of pipe mounted on wheels. On a 110-acre section of potatoes across the road from his house, the unit is 1,140 feet long, and takes 16 hours to make a complete revolution.

On the larger potato field, 127 acres, the unit measures 1,320 feet.

With the Raincats, Nelson can put .35 inches of moisture on the field in a 24-hour cycle.

On his wheat fields, the farmer uses trimatic sprinklers, which water a section of the field at a time, rather than going in a circle.

Hooked up to his Raincat sprinklers are fertilizer units, enabling him to put fertilizer on the crop at the same time he waters. He adds three pounds of N-Sol 23 per acre on each revolution.

It's not cheap to irrigate the crop, Nelson will tell you. He figures it costs him $500 per acre to grow his potatoes. And that's in addition to the original cost of the irrigation equipment.

The seed for the smaller field of Norgold potatoes alone cost $100 per acre, and had to be shipped from North Dakota. The seed for the field of Russets was obtained from Burns and Klamath Falls.

It actually was irrigation that got him started on potatoes, Nelson says.

"We had to have a crop that would bring more income if we were going to irrigate," he reflects.

Potatoes are definitely bringing more money than wheat, even when the wheat averages 70 bushels per acre, as it does on his irrigated wheatland.

On the open market, in the first week of his harvest, baking potatoes brought five cents a pound. Some brought only two cents, but they weren't average.

Nelson hopes to have four and a half million pounds of potatoes off his 110-acre field. And he hopes to get 30 tons per acre off the larger field of Russets, which figures to be about seven million pounds.

That's a lot of spuds. And it's possible because of irrigation.

Water Abundant

Oregon, Idaho, Montana and Washington all appear to have ample water supplies for irrigation this year, and also, low-elevation snow in many areas could cause high water damage.

Oregon has near-record snowpack, according to the Soil Conservation Service. Montana's Upper Columbia and Missouri Rivers have mountain snowpack ranging from 130 to 200 per cent of average. Similarly, the Idaho and Washington water outlook is excellent. The snowpack south of the Snake River is one of the best in recent years. The snowpack is heavy in the U. S. portion of the Columbia Basin but falls to about average amounts on the Upper Columbia and Kootenai Rivers in British Columbia.

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Installment of Sprinklers Gains Efficiency Growth

If you are now dry farming your land—or if you're applying water by flood irrigation—it will pay you to investigate the advantages of sprinkler irrigation before you go through another crop year.

If you're irrigating your land for the first time, you'll find sprinkler irrigation will in most instances eliminate need for land leveling. This is because the piped pressure system and overhead sprays distribute water evenly over the contour of the land.

If you're now flood irrigating your land, you can stretch your water supply—irrigate additional acres—by changing to sprinkler irrigation, because sprinklers use less water and do a better job.

Sprinklers will gain land for crops that otherwise would be lost in ditches—an acre or more for every 40 acres you farm.

And of great importance, sprinklers will save you all the time and work it takes to maintain and regulate water in open ditches.

Irrigates with Well and Pond

A deep well and pump are the water source for a holding pond that enables Gene Sharrow to sprinkler-irrigate an 80-acre tract of arid land at his Surprise Valley ranch in northern California.

Output of the deep well and pump (1200 gallons per minute) fills the 375-foot-long, 70-foot-wide and 14-foot-deep pond with 54-degree water.

Taking water for the irrigation system with a 30-horsepower electric pump at the far end from the wells makes the holding pond double as a settling basin, keeps sand and gravel out of sprinkler lines.

Sharrow irrigates 40 acres of truck garden, potatoes and barley with a self-propelled pivot-type sprinkler system mounted on steel towers and wheels. Sprinkler heads are spaced 32 feet apart on 620 feet of pipe. A gun-type nozzle shoots a stream of water an additional 80 feet as the pipeline slowly pivots in a giant circle.

At its fastest setting, the watering system can complete one revolution around the field in about 16 hours, distributing one-half inch of water. Allowing for evaporation, Sharrow figures he can apply one inch of manufactured rain to this 40 acres in two and one-half days.

The remaining 40 acres is in alfalfa and is sprinkled with a wheel-move system. Applying irrigation tripled the alfalfa yield. Sharrow now gets three cuttings a year as compared with a single cutting when the crop was dependent on natural moisture.

Sprinklers Cover Hilly Ground

"It takes a sprinkler system to put water where it's needed on the hilly type ground I farm. Putting the sprinkler system to work during a full months to build water tabie for next year's crop increases my alfalfa seed yield as much as one-third."

This is the report of Karl Ganz, Route 1, Touchet, Washington, who uses a 40-horse power electric pump to push irrigation water to sprinkler lines more than 100 feet above the pumping station on the bank of the Touchet River.

Ganz starts the irrigation season in mid-spring and continues until the latter part of June, preceding alfalfa seed harvest. With the crop off, he resumes irrigation in early fall and continues as long as weather permits, applying nine to ten inches of water in 72 hour sets.

"My experience proves this building up of water table with autumn and early winter irrigation is of great value to next year's crop," said Ganz. "It adds from 100 to 200 pounds of seed per acre to our yield."

Needs Irrigation in Rainy Area

"Our sprinkler irrigation system means the difference between a crop and no crop at all—even though we get 40 inches of annual rainfall," said Robert Leabo, who has 190 acres of irrigated mint land at his Route 1, Turner, Oregon farm.

"This heavy rainfall comes mostly between October and May, with only occasional rain during the prime growing season.

"We rely on our electric pumps and sprinklers to supply us man-made rain when we need it."

Leabo has a 40-horsepower electric pump at an irrigation canal and a 25-horsepower pump lifting water from a creek. He irrigates around the clock, two sets a day.

In addition to irrigating his crop, Leabo uses the sprinkler system to apply liquid nitrogen at intervals throughout the growing season. This leaf-feeds the plants for faster results, and it saves him two weeks of work each year.

"Applying fertilizer this way is just as easy as setting the timer on the kitchen electric range," he pointed out. "You just set it and forget it."

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