

FINAL REPORT: "GWMA IRRIGATION WATER & NITROGEN
MANAGEMENT BMP MONITORING GRANT"

This project continues to be our best method of making one on one contact with local growers. We consider this project more educational than scientific. It takes more than one year on the program for most growers to have trust in the readings they receive with the watermark sensors. After the first year most growers are willing to discuss the possibility of reducing the number of irrigations they usually apply in a season. Almost 100% of the fields with watermark sensors installed also are soil sampled for nutrient requirements. Because they have the results of the soil sampling it makes it easier to instill the concepts of the relationship between irrigation and fertilizer utilization.

We had thirty-three growers participate in the program this season. Twenty-five were repeat growers and eight of them were new to the program. The following table indicates the number of fields, acres and crops the watermark sensors were used in.

CROP	#FIELDS	#ACRES
Potatoes	64	1785
Onions	16	644
Sugar Beets	5	224
Wheat	2	59
Corn	2	88
Mint	2	280
TOTAL	91	3081

The number of growers who have participated in this program has varied over the past three seasons. In 1995 we had 27 participants. In 1996 we had 40 and this was the year we increased the cost to growers by 25%. We had 33 grower participate in 1997. We had the most acreage, I think the reason for the large acreage is because we charge by the field and growers enrolled more large fields. Of the 33 growers who participated in 1997 25 were repeats and 8 were new participants. We find that about half the growers who discontinue using our service buy their own sensors and do their own readings. Some growers use both our service and their own readings.

It is very difficult to get an accurate reading for the total amount of water the growers save. We use the NRCS's CONRAT rating system to make an estimate. This rating allows us to assign a numerical score to how much we think a growers irrigation skills improve. The system then runs the improvement in irrigation efficiency and gives you a print out in acre inches of water saved for the season. In running this computer program we find the average savings over all crops and all methods of irrigation applications to be between 3 and 6 inches. If you use the average of 4.5 inches saved and apply it to the 3080 acres enrolled you get a savings of 1155 acre feet for 1997. If you divide this by the \$10,000 of grant money it cost \$8.65 per acre foot. This estimated water saved was stored in the reservoir and would potentially be used instream the following year if the reservoirs fill.

In discussing with growers if they feel their yields have increased we usually are told they don't think so. We attribute this to the fact most of the growers participating are some of our better producers. Many growers tell us they feel their quality improves and some times they are paid for the increased quality.

In January of 1998, we held an Irrigation/Nutrient Management Workshop. The program included Dr. Clint Shock and Eric Fiebert from the OSU Malheur Research Station, Lynn Jensen, OSU Malheur Extension Service, Gregg Capps, NRCS Water Quality Specialist and Ron Jones, MCSWCD Water Quality Planner. A report of the meeting and participants is attached.

IRRIGATION WATER MANAGEMENT INCOME AND EXPENSE REPORT

INCOME:

OSU Extension (Cash match to grant)	\$ 3,122
Growers (Cash match to grant)	11,000
Grant	10,000
Total Income	24,122

EXPENSES:

Wages	8,653
Mileage	5,473
Equipment	5,080
Meetings	80
SWCD (supervision, postage, office supplies, bookkeeping)	4,836
Total Expenses	24,122
Total Project Cost	24,122

WATERMARK WORKSHOP

January 8, 1998

Twentyfive in attendance (6 agency).

Ron Jones: Passed out information
Covered Watermark installation
Watermark readers available
Explained Watermark program funding
Talked about costs of equipment
Irrigation water management
Noted that Clint Shock, Lynn Jensen, Gregg Capps, Eric Fiebert and Ron Jones can help answer technical question.

Questions and Answers/Discussion:

Sealing sensors & unsealed sensors
Discussed reader training
Sensor placement (sunny side or shady side of furrow)
Assessing program's value
Showcase water conservation to the rest of the State
Kathy Pratt, EQIP I & E coordinator, through NRCS
Kathy will give news to media on irrigation practices
Ability to trust sensors, but also recommend digging into the soil
Regularity or irregularity-need to be more forceful on reading schedule
Price per set will remain the same
Upcoming PAM workshop announcement- February
Causes for loss in yield, etc,
Ranges in calibration for various crops.