

Activity: Irrigation water techniques - Tensiometer (A.4.10)
Locations: Jordan Valley
Beneficiary: 60 farms.
Purpose: To determine actual irrigation water requirement and scheduling according to tensiometer readings, and thus, increase water use efficiency in irrigation.

Summary

Available documents

Background information:

Farmers in Jordan in the irrigated area are using the water in lower efficiency than the optimum; this occurs as a result of using more water than needed, improper scheduling of irrigation intervals, and the inaccurate estimation of water needs by the plant all over the growing period.

Usually, farmers estimate crops water requirements depending on their experiences and their field observation. Although, this way may give good results in certain situations, it stills not the best way to decide when and how much to irrigate. The use of a precise method for determining the soil humidity (or soil water content) will result in better performance and will increase the net return for the farmers

There are many methods to measure the soil water content; one of them is the use of tensiometer which gives an indication of the availability of the water for uptake by plant roots, as well as for movement of water within soil profile.

- List of beneficiaries
- Photo gallery
- Tender document.
- Irrigation schedule sheets

Photos



Design assumption:

- The farmers uses higher amounts of water for irrigation than the crops requirement
- The farmers doesn't follow the right irrigation schedule which affect plant growth and production
- Irrigation systems in the farms need redesigning and improvement to reach the optimum efficiency.



Activity Implementation:

This activity will be implemented as follows:

- Select the beneficiaries according to certain selection criteria
- Bedding and tendering for supply of tensiometers.
- Install the tensiometers in the farms.
- Fill the schedule irrigation forms by the farmers.
- Make the necessary recommendations for the farmers to improve the performance.

Benefits :

- **Expected:**

Improving water management and use efficiency and increasing the income generated at the farm by:

- ✓ Reducing water consumption per unit production thus increasing the yield
- ✓ Reducing amounts of fertilizers used and increasing the efficiency of fertilization.
- ✓ Increasing the area planted under irrigation using water saved by the proper irrigation practices.
- ✓ Reducing disease incidences that occurs as a result of increased water amounts in the soil or from the weak growth of the plants due to improper irrigation scheduling.
- ✓ Maximizing plant benefits from production inputs (water, fertilizers, pesticides ... etc)

- **Actual:**

The first season was a testing for the practices conducted by the farmers related to the irrigation; readings of the tensiometers together with the irrigation schedule and amounts will permit the shaping of all-over-view, thus, points of intervention can be determined, and recommendations can be given to the farmers to improve the performance in the following season.



Beneficiaries contribution:

- Helping in the installation of the tensiometers and looking after them (protect from damage or theft)
- Register the tensiometer reading together with the irrigation amounts and timing for comparison



Time schedule of implementation and progress:

- Preparatory phase after signing the contract
- Receipt of tensiometer
- Site selection and preparation 31/10/06 – 29/11/2006
- Supply and install 30/11/06 -10/11/2007
- Monitoring the irrigation schedule and supporting: 10/12/2006 – 31/12/2007



Criteria for locations/beneficiaries selection:

- Farms are growing crops under irrigation.
- Farms contain storage facilities to allow scheduling.
- Farmers have a minimum level of skills and knowledge to practice the new technology
- Farmers are willing to adopt the new technology and to improve the irrigation system.