

Increasing Citrus production through orchard management techniques under Agricultural Sector Linkages Program

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Kinnow mandarin is the dominant citrus variety produced in Pakistan, and export of this variety is an important source of revenue to many rural communities; However, 35% of the crop is lost due to a range of orchard management and postharvest handling issues.

A study visit to Pakistan in 2006 led to an AusAid/ACIAR-supported project led by NSW DPI with Pakistani collaborators to address some of these issues.



Kinnow mandarin fruit on sale in Pakistan.



A group of extension officers being instructed in the use of tensiometers to measure soil moisture which enables the linking of water delivery to needs.



Mandarin and orange varieties imported from Australia growing at the University of Agriculture, Faisalabad, Pakistan prior to planting out into evaluation trials. The performance of these mandarin and orange varieties in some areas of Pakistan will provide valuable information to Australian researchers as climate change alters the temperature profile in existing citrus producing regions in Australia.



The installation of flume being demonstrated to agriculture extension officers in Pakistan. The flume enables measurement of water flows in furrow irrigation systems.

Problems and constraints:

- Reliance on a narrow range of cultivars and rootstocks
- Extensive use of flood irrigation
- Poor management of tree mineral nutrition, pruning and crop load
- Intercropping with field crops
- Limited research and extension capacity

Objectives:

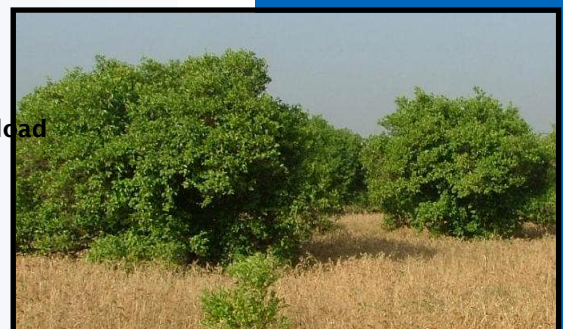
- Establish virus-free nursery
- Provide with a wider range of germplasm to extend growing season
- Improve irrigation systems and irrigation management
- Improve orchard and tree management
- Build Pakistan research and extension capacity

Dissemination and adoption:

- Growers' demonstration sites
- On farm-training and extension material
- Farmers' field schools/growers' self-help groups

Achievements to date:

- New cultivars/rootstocks established
- Flood irrigation converted to under-tree furrows
- Pruning trials established
- Australian-based crop management training provided



A typical citrus orchard with wheat intercropped near Sargodha, Pakistan. Managing two crops is difficult; the needs of one are frequently not met or are exceeded while trying to meet the needs of the other.



Flood irrigation system modified to under-tree furrow irrigation system. Restricting water to furrows reduces the amount of water needed and it also reduces the risk of trunk damage and root damage associated with water logging.

