Surface Irrigation Systems

Surface irrigation is the use of gravity to apply and distribute water across the soil surface. Water flows through outlets from irrigation supply and across the field to infiltrate soil and irrigate crops.

This project is supported by the Australian Government's *Water for the Future* Initiative through the On-Farm Irrigation Efficiency Program.

On-Farm Efficiency Projects
Round 1 - 97 projects
Round 2 - 170 projects

Murray Irrigation

Surface Irrigation Systems

Types of Systems

Contour
Involves filling the first (highest) bay with water from the supply and then draining that bay into the next one down the slope. Successive bays can be filled simultaneously from the irrigation supply if desired.

Border Check
Involves the construction of borders down each bay to direct water that is applied from the top flowing ot the bottom. Any excess run-off is collected and reused via the drainage and recycle system.

Typical cost per hectare is approx. $1,000

Advantages

- availability of local contractors to construct
- requires less costly capital infrastructure
- low depreciation of capital infrastructure
- generally gravity powered, no external power required to deliver water to crops
- effective on heavier, less permeable soils which dominate our region
- suitable for broadacre pasture and crops

Disadvantages

- greater risk of soil waterlogging
- greater risk of nutrient loss
- lower degree of application uniformity
- requires level terrain to achieve even water distribution
- generally limited to larger scale broadacre systems

KEY WORKS FOR EFFICIENT SURFACE IRRIGATION SYSTEMS

Landforming
Improves evenness and gradient of terrain allowing consistent water distribution and drainage.

Supply system with correctly sized structures
Delivers maximum flow rates to bay outlets with minimum headloss.

Drainage system
Essential to capture run-off to avoid waterlogging and recycle excess irrigation water.

Recycle and storage system
Essential to capture, store and reuse drainage water, improve flow-rate of irrigation system and for flexible and timely water use.

Bay outlets
Need to be large enough to irrigate a field over a given period of time.

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