IRRIGATION RESEARCH & EXTENSION COMMITTEE

2005 Grains Research UPDATE GRDC

FOR IRRIGATION CROPPERS

Farming using Sub Surface Drip Irrigation (SDI)

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The current water situation needs to be viewed as a potential opportunity to improve farming practices and increase the overall economic return, not as an obstacle to farming.

Amount of water applied via irrigation is a major factor influencing yield per ha. Irrigation technology utilised by many farmers has changed little in modern times compared to other components of farming, eg soil nutrition, fencing, dairy shed design, cultivation methods etc.

Sub surface drip is not for every farmer. Soil type, energy source, age, debt level, water quality, farm layout and future farming plans etc are all things that need to be considered in contemplating a transition from flood irrigation

Components of a SDI system:

- Motor
- Pump
- Filters
- Mains (PVC)
- Sub mains (PVC)
- Tape
- Controllers (Back flushing filters, automation)

Negatives of SDI:

- Capital cost $3500 to $4000
- Lack of technical support
- Lack of education
- Root intrusion
- Rodent and insect damage
- No financial incentives available in most areas (unlike incentives associated with automating flood irrigation)

Positives of SDI:

- 50% to 80% increase in product per mega litre
- Allowing irrigated agriculture on uncommanded land
- Laser grading, and the amount of cut and fill can be greatly reduced
- Smaller irrigations can be applied if rain is forecast (reduce irrigation time)
- Eliminates channels and check banks, channel maintenance
- Ability to increase area under crop production with existing labour
- Ability to control decisions and destiny

Environmental benefits:

- Nitrogen applied through drip as required, thus reducing leaching to ground water
- Eliminates tail water run-off to rivers and streams
- Soil profile is no longer saturated after irrigation
- Less ground required to produce tonnes hence less inputs (Herbicides etc)

SDI has been commercially used in a range of crops including lucerne, maize, vegetables, tomatoes, etc but is still relatively untried in a grazing situation.

Traditionally SDI was utilised for high value crop production (vegetables) with a short-term life expectancy. Lately a few farmers have pushed the limits of this thinking and now believe that if the system is managed correctly 25 years plus may be possible, therefore making the initial capital cost of establishing SDI not so intimidating.