The Benefits of Drip Irrigation

Sub-surface Drip: Lucerne Production
On-surface Drip: Maize Production
What is Drip Irrigation?

- Drip irrigation is the practice of applying small amounts of water and fertilizer uniformly across a specific area. The water and fertilizer are delivered directly to the crop root zone, eliminating runoff, evaporation, and drift. A drip irrigation system gives producers the best uniformity and application efficiency available, consequently saving them time, energy, and water, all while maximizing yields.

- 2 Types of Drip Irrigation:
  - Sub-surface
  - On-surface

- Focus: Efficient irrigation in order to maximize kilograms produced per liter of water applied.
Drip System Implementation

- **Pre-installation:**
  - Water Analysis
  - Soil Analysis
- **System Design**
- **System Components:**
  - Pump System
  - Filtration
  - Fertilizer/Chemical Injection
  - Flow meters
  - Automation
  - PVC Mainlines, Field Control Valves & Sub-mains
  - Flush Manifolds
  - Dripline
- **Management & Monitoring**
- **Irrigation Scheduling**
Typical Drip System Layout
Benefits of Drip Irrigation

• Most efficient form of irrigation: kg’s produced per litre of water applied
• Proven increased production of Lucerne – extended growing season; trials indicate 1 ton/cutting/hectare more than pivot = (25–30 ton/year achieved)
• Low energy requirements: Emitter Pressures
  – Drip = 1 Bar
  – Pivot = 1.5 Bar
  – Permaset = 3 Bar
• Low Water consumption (30% - 50%) less than overhead irrigation)
• Longer lifespan of crops – weeds cannot establish themselves as the soil surface does not get wet
• Continue normal irrigation while cutting/baling lucerne or grazing of pastures
• Solar Power can be utilized for electrical pump requirements
• Ideally suited for smaller shaped areas such as old flood lands
• Automated systems are Management friendly, no labour requirements
• Healthier root systems, water and fertilizer applied directly to root zone, allows for better uptake of water and nutrients

Lucerne Production: 10Ha = flow requirement of 21 000l/hr
  = 250 – 300 tons production per annum
Drip Installations
Maize Production on Drip
Questions?