NETAFIM™
GROW MORE WITH LESS

DRIP IRRIGATION FOR OPTIMISED POTATO PRODUCTION

NETAFIM KNOWLEDGE

The high yield potential in potato production is matched at the other end of the spectrum by a high demand for water and nutrients, as well as sensitivity to water stress. This underlines the importance of applying water and nutrients with precision to maximise the impact of these resources to gain higher yields and a better-quality crop. If the potato plant can receive the exact required amount of water and nutrients exactly when it needs it during sprouting, vegetative growth, tuber initiation, tuber bulking and tuber maturation, optimal results can be achieved.

Benefits of Drip Irrigation in Potato Production

- Manage the root-zone optimally to achieve optimal soil, water and oxygen ratios. This holds many benefits such as preventing hollow and black heart, internal necrosis, sugar end, blights, tuber cracking, malformation, wilt and other challenges.
- Apply frequent irrigations to potentially decrease the incidence of common scab and charcoal rot in potatoes.
- Apply water and nutrients precisely based on the crop stage and current conditions to achieve optimal yield and quality.
- Regulate soil temperature.
- Prevent fertilizer leaching.
- Achieve uniform germination, tuber development and yield.
- Manage salinity.
- Prevent soil crusting that may hinder tuber sprouting.
- Use odd-shaped plots and other fields not suitable to pivot irrigation optimally.
- Reduce the environmental impact.
- Achieve optimal operation even at low pressure and reduce energy costs.

For potato production, drip irrigation offers much more than reduced water-use. As drip irrigation prioritises efficiency and precision, it has the potential to transform potato production towards improved sustainability and profitability. It can ensure that potato producers meet growing demand and move forward in the drive to do so more sustainably.

Speak to our Experts

Although drip irrigation is not a massively common practice in potato production, its adoption by potato producers is on the increase, and with that the industry's knowledge about successful application. The adoption of a new practice is driven by a specific challenge on the one end, and the availability of knowledge and support on the other end.

Netafim is called to drive the adoption of drip irrigation in potato production. This is why Netafim business units across the globe are **actively involved in potato drip irrigation trials** and have been for some time. It is our duty to gain as much knowledge as possible about product application, irrigation and fertigation management and many other aspects of drip on potato to **support potato producers in their drive for increased sustainability**.

We are continuously gaining knowledge about the potential and practical feasibility of drip on potatoes. This includes knowledge on the use of **machinery for layout and retrieval** of driplines, as well as **recycling solutions** for used driplines.

Speak to our experts about the knowledge gained and the potential impact drip irrigation can have on your farm. Have a look at the next page for general product solution and irrigation guidelines based on field experience.

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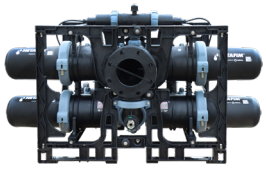
Product Solutions

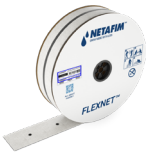
Based on field trials, Netafim South Africa's optimal drip irrigation solutions for potato production are based on the following:

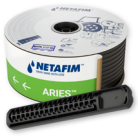
- One to one solution – one dripline per row.
- Multi-seasonal medium wall driplines.
- Pressure compensating or non-pressure compensating drip based on topography and lateral length.
- Flow rates between 0,6 and 1 ℓ/h.
- Dripper spacings between 0.3 and 0.4 m.
- This solution must also be supported by machinery for laying, recoiling and recycling dripline.

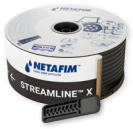
Netafim offers a wide product range to answer in the specific needs of every farm. From filters, flexible pipes, and driplines all the way to advanced fertigation and automation solutions.

ALPHADISC™ | **SCREENGUARD™** | **FLEXNET ™** | **ARIES ™** | **STREAMLINE ™ X** | **NUTRIDOSER**







Irrigation Management

For the irrigation management approach, although dependent on soil, climatic and crop conditions and monitoring, the following guidelines are suggested:

	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6
STAGE NAME	SEEDING TO EMERGENCE	SPROUT DEVELOPMENT	VEGETATIVE GROWTH	TUBER INITIATION	TUBER BULKING	TUBER MATURATION
GRAPHIC PRESENTATION						
CROP COEFFICIENT (KC)	0	0.5	0.5-0.75	0.8-1.1	1.1-0.8	0.8-0.4
SOIL DEPLETION [%] (IRRIGATION INTERVAL)	50	30 (every 3-4 days)	30 (every 3-4 days)	20 (every 1-3 days)	20 (every 1-3 days)	30 (every 3-4 days)

The potato industry has made massive strides in adapting to reigning conditions and increasing sustainability, yet there remains a lot of room for improvement with regard to water and energy use efficiency of commercial potato production in South Africa. Challenges such as increased heat stress due to erratic climatic conditions, increased disease pressure and water scarcity must be overcome and drip irrigation can be the bridge that helps farmers cross this storming river.

Of course, high capital layout remains a key concern in the adoption of drip irrigation, yet experience shows and users agree that initial investment might be high, but the long-term savings from reduced water and fertilizer usage, increased yields, and reduced disease incidence quickly turns this into a profitable investment.

Choose increased efficiency, better crop management and success in the field.
Choose drip irrigation to grow more with less in potato production.

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