

MONITORING OF AGRI-TREAT 300 ON EMITTER PERFORMANCE TSB, MHLATI, MALALANE.

Farm Manager:	Mr Frans Kruger
Crop:	Sugar Cane
Emitters:	Netafim, RAM, P.C., 1,2ℓ/hour, 80cm spacing
Trial 1.	Above ground laterals. Block 24
Trial 2.	Subsurface lines Block 34
Water Source:	Crocodile River

Summary:

Measurements from blocks 24 and 34 indicate substantial clogging and uneven delivery from individual emitters.

AgriTreat 300 cleared the emitters in less than one treatment indicating the following:-

- a. Bacteria is responsible for the fowling
- b. Filtration systems are adequate, well designed and well managed.
- c. When the water pressure was substantially increased the emitters delivered the correct water flow indicating that the membranes are of a good quality and still in a good working condition.

The cleaning of the Netafim drippers using AgriTreat 300 with water from the Crocodile River is a routine, simple matter and poses no problems.

Results, Block 24

Trial 1 A (Above ground)

Emitters: Netafim RAM 1,2l P.C.

No: 246 emitters

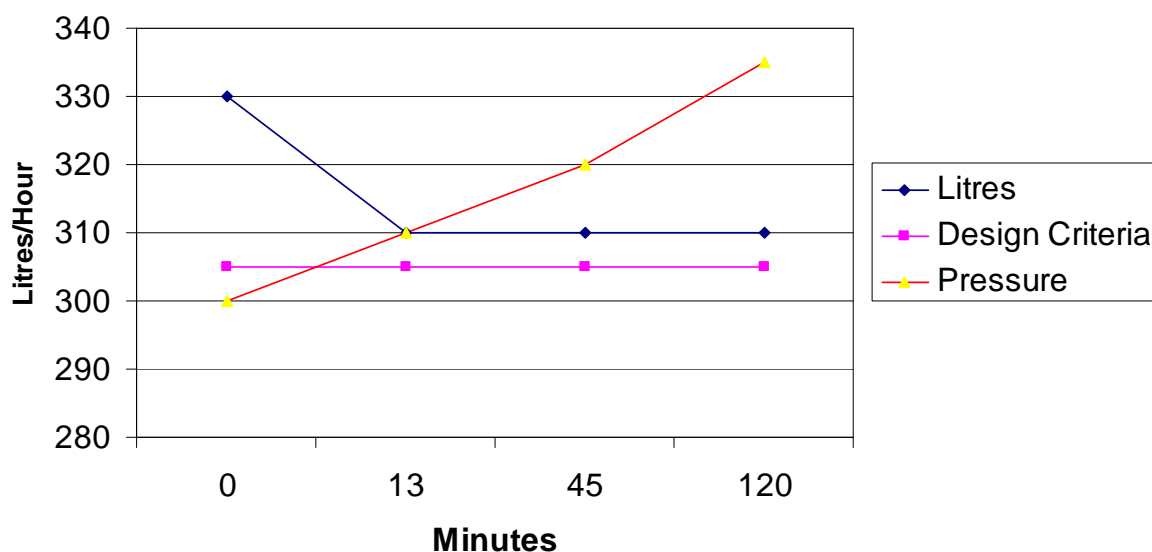
Pressure Start lateral 1.6 Bar

End lateral 1.5 Bar

Loss of pressure in lateral 0.1 Bar

Treatment: AgriTreat 300 – 500ml per 10m³ water.

Trial 1A



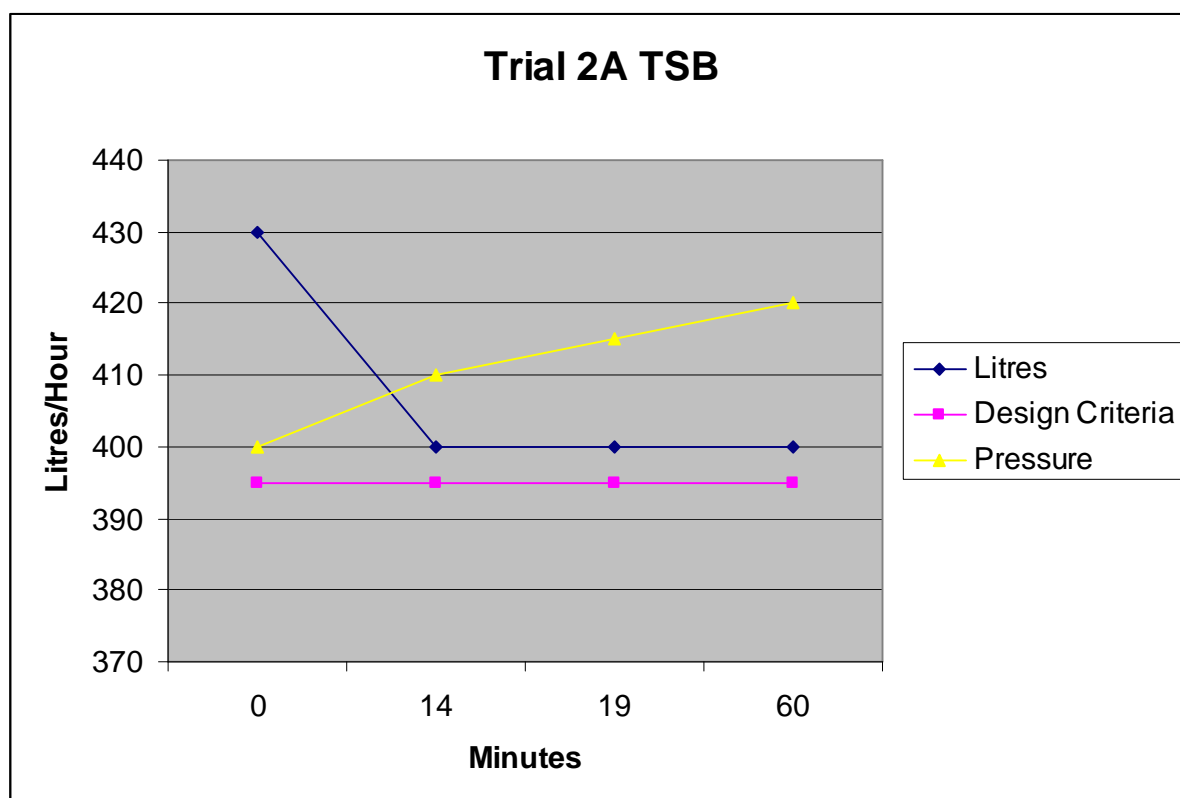
Comment: Start: Membranes clogged, emitter delivery uneven.
End: After 13 minutes of AgriTreat 300 application best result achieved.

Warning: 8 drippers completely blocked i.e. 3,25% of emitters delivering no water.

Pressure: Increased from 1.9 to 2.1 Bar

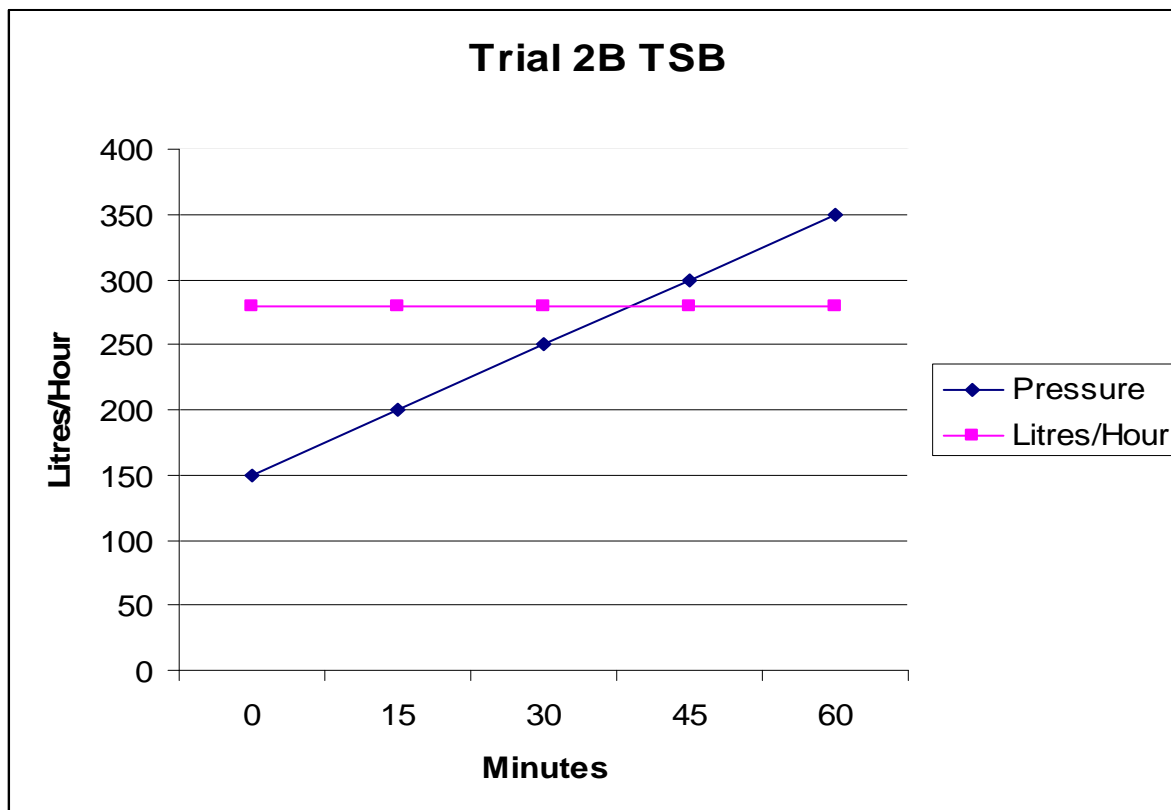
Trial 2A (Sub surface) Block 34

Emitters: Netafim RAM 1,2l P.C.
Loss of Pressure in lateral: 0,1 Bar
Treatment: Slug dose 1,5l AgriTreat 300 per 10m³ water



Comment:

Using a slug dosage of 3 times the recommended dosage i.e. 1,5l AgriTreat 300 per 10m³ water gave results no better or quicker than using the normal dose of 500ml per 10m³ water.

**Comment:**

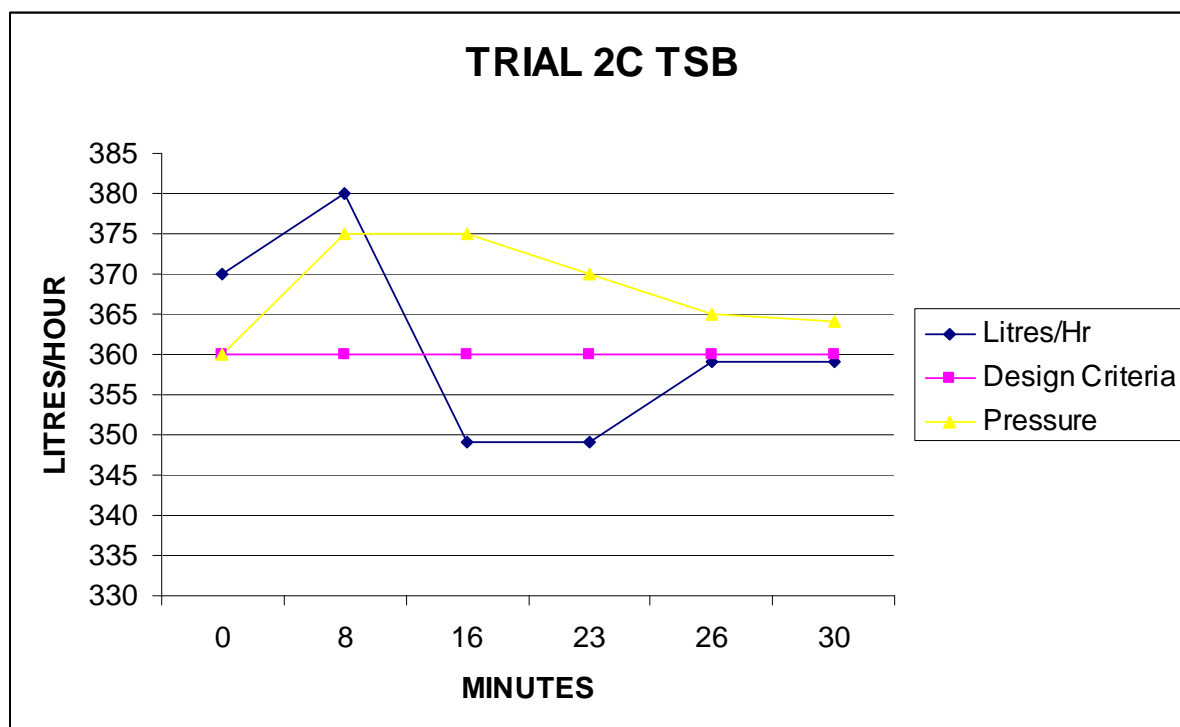
After the emitters had been treated with 1 hour of AgriTreat 300 per 10m³ water and the designed delivery had been achieved the pressure was doubled without an increase in water flow. This indicates that the membranes have been cleared and deliver according to design irregardless of the increase in pressure. The compensating membranes are in a good working condition.

The laterals although being underground experienced no difficulty with the cleaning process.

From the work done it can be seen that sub-surface laterals are less prone to clogging and are easier to clean than laterals above the ground.

Trial 2C TSB (Sub-Surface)

Emitters: Netafim 1,2ℓ P.C.
Treatment: AgriTreat 300 - 500ml per 10³ water



Comments:

This is a good example of the cleaning process when the clogging is caused by bacteria only.

The average delivery is slightly higher than design criteria. As the bacteria are removed even more water is delivered resulting in an even greater flow. This continues until the compensating membranes are cleared and start to work again. The membranes clogged in the open position clear first due to the higher water flow, the membranes once cleared restrict the flow to design criteria, the flow drops to below the design specifications until the emitters clogged in the closed position open and start to deliver more water.

This is an example where a flow meter would indicate that the laterals are delivering the correct amount of water but measurement of each individual emitter would show a very uneven distribution.

RECOMMENDATION

The normal rate of 500ml AgriTreat 300 per 10m³ of water for 1 hour is recommended. Any application method which will distribute the product evenly into the water flow for 1 hour can be used.

IDS have available Alldos dosing equipment specially designed for this application in order to save costs and maximize the products benefits.

Pumps suggested:

RT 100 – manual system price approx R3000

GB 100 – automatic system price Approx R8000

The positioning of the pumps is very important and discussion on this matter would be necessary.

Contractors are available who will apply AgriTreat 300 on a commercial basis.