

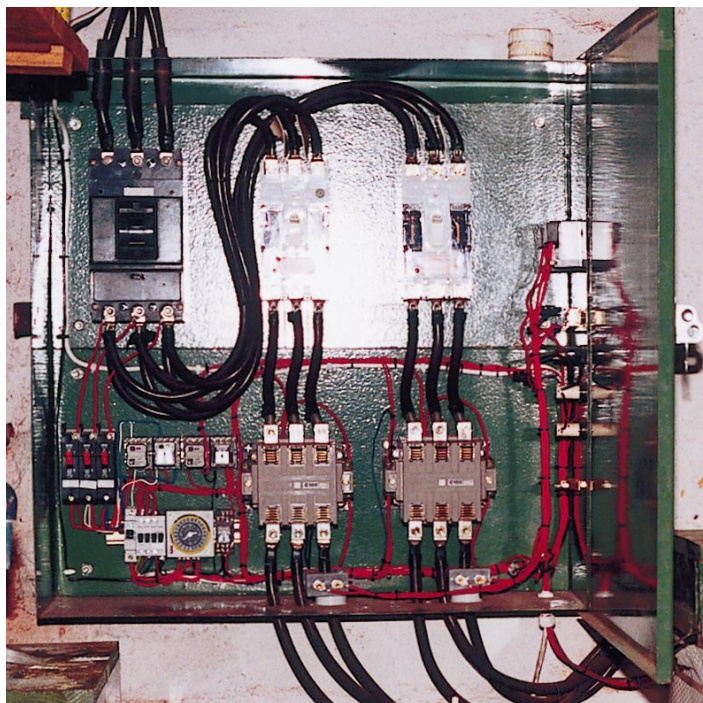
# Flower farming a force to be reckoned with, thanks to Agrelek

*Flower production at this flower farm continues to be affordable, because of the effective use of electricity for the low-cost water-heating system that is used for temperature control in the greenhouses.*

**W**hen Mr Peter Aitken added two new greenhouses to his nursery, he decided to deviate from his current method of temperature control used in the other greenhouses, and try something different. He decided to install a low-cost electrode water-heating system in the new greenhouses. The system is very effective and considerably more cost-effective.

For the past ten years, Mr Aitken of Misty Vale Flowers has been growing cut flowers on the farm Wide Horizon, near Howick in KwaZulu Natal. One wholesaler sells his total production of chrysanthemums, carnations, roses and gypsophila to the local market.

Although the heating system in the existing greenhouses is



The low-cost electrode water-heating system that supplies warm water to the greenhouses.



Beautiful flowers from the greenhouses, thanks to effective temperature control. Mr Ken Gilham admires the blooms.

working quite effectively, Mr Aitken was looking for an even cheaper option. The current process consists of fans that blow air over a set of elements to heat it, and then disperse it throughout the greenhouse.

Mr Aitken decided to install electrode water-heating systems in the two new greenhouses of 1800 m<sup>2</sup> each. The capital outlay is low, it is effective and satisfies the requirements totally.

The system consists of a water tank with three electrodes with a 200 kW capacity. A saline solution is added periodically to ensure



Mr Ken Gilham, Agrelek advisor (left), and Mr Peter Aitken at a heat exchanger in one of the new greenhouses.



an effective electric current amongst the electrodes so that the water can be heated optimally. The water temperature is controlled thermostatically at a constant 87 - 90° C. The warm water is pumped to the greenhouses, where it flows through the newly installed heat exchangers in the greenhouses.

A fan has been installed at each heat exchanger to blow the air in the greenhouse over the heat exchanger to heat it, and then again disperse it throughout the greenhouse.

This system enables Mr Aitken to keep the temperature at a constant 12° C or 15° C during winter, when the outside temperature can be as low as 3° C. The temperature is also thermostatically controlled to suit the type of flower planted in the greenhouse.

A further development in the new greenhouses is that Mr Aitken has switched over to hydroponics. This has eliminated the soil sterilisation process that had to be done every time before new plants could be planted. They use a steam generator for the sterilisation. Because hydroponics needs no soil sterilisation and delivers better results, Mr Aitken is planning to gradually convert all the greenhouses to hydroponics.

Mr Aitken has established a good working relationship with Agrelek, and especially Mr Ken Gilham from Agrelek in Pietermaritzburg. Mr Gilham has assisted him with good advice ever since he started his first greenhouses. When he initially decided to use electricity at his nursery, Mr Gilham suggested and saw to it that a 1MVA transformer was installed on the farm. This ensured that there was sufficient capacity for any possible extensions to the nursery in the future.

Mr Aitken saves money by adhering strictly to the Ruraflex 2 tariffs. They need the heat in the greenhouses mainly during the night, and can therefore make use of the off peak tariff.

The greenhouses are kept cool in summer by using a wet wall. Depending on the humidity in the greenhouses, the wet wall can lower the temperature by 3 - 4° C.

Mr Aitken lauds the assistance and advice received from Agrelek. It has enabled him to manage his nursery cost-effectively, not to mention the fact that electricity is a convenient, easy, clean and fast source of energy.



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help you farm for profits**