



These blueberries grow to full potential because they get all the water and nutrients they need, when they need it.

I feel more in control of my farm," says Ernst Myburg of the farm Lekkerwater near Porterville in the Cape province of South Africa. Ernst and his wife, Alana, took the big step on their blueberry farm with an improved and automated irrigation system.

"You cannot afford not to join the precision irrigation revolution," he says.

Ernst says he was used to opening and closing irrigation valves manually, and before you realised it block A was flooded while the berries in block B were parched. Now he feels fully in control monitoring the irrigation on his berry farm from anywhere in the world using his smartphone.

He uses the technological solutions provided by Agrico. Agrico joined efforts with their suppliers to install a tailor-made system on Ernst's farm to suit his needs.

"People should not only think of Agrico as a centre pivot company," says Alfred Andrag, Operational Director of this established agricultural enterprise, dedicated to transform the whole of Southern Africa to Agrico-green farming.

Centre pivots are only one part of Agrico's total water management solution. Agrico also specialises in micro-

and drip-irrigation systems and supplies components such as pumps, valves, pipes, filters, controllers, management systems and smart designs.

"In order to get the system to work effectively on Lekkerwater, we had to pump the water from a dam higher up in the mountains through a pump station that is situated lower than the berry fields," says Johan Burger, Design Engineer for Agrico.

The water is pumped through an AZUD filterbank to remove any impurities. After filtration, fertiliser and biological additives are injected and thoroughly mixed with the water, and the pH level is corrected to suit the needs of the berries.

The reason why the pump station must be lower than the berry fields is to prevent the build-up of air in the pipes, causing delayed and inaccurate response of the system. The berries are not irrigated for long periods but rather with a pulsating irrigation technique.

Johan says: "You have to feed the plant with the enriched water during the day while it grows, but without applying too much water and drowning it. We typically irrigate for five minutes at a time with 30 to 40 minute intervals."

The pipes are fitted with non-return valves to ensure that there is immediate application when the short irrigation cycle starts by excluding air from the pipes.

The length of the irrigation cycle can be adapted according to the size of the plants and other conditions such as heat, wind and rain. This method also provides the most effective way of measuring and applying liquid fertiliser.

The pH (acidity) and EC (electric conductivity used to measure the quantity of fertiliser in the water) are monitored constantly at various points in the system, and different tanks containing different fertilisers can be connected to the system. The measuring and application of fertiliser is controlled by a computer. Accurate application is vital; not just for plant health but also to prevent blockages in the system and the build-up of salt residue in the soil.

Certain fertilisers cannot be pre-mixed due to dangerous chemical reactions that can occur.

After every substance is added, the main line has a couple of bends to ensure turbulent flow and adequate mixing of all the chemicals with the water.

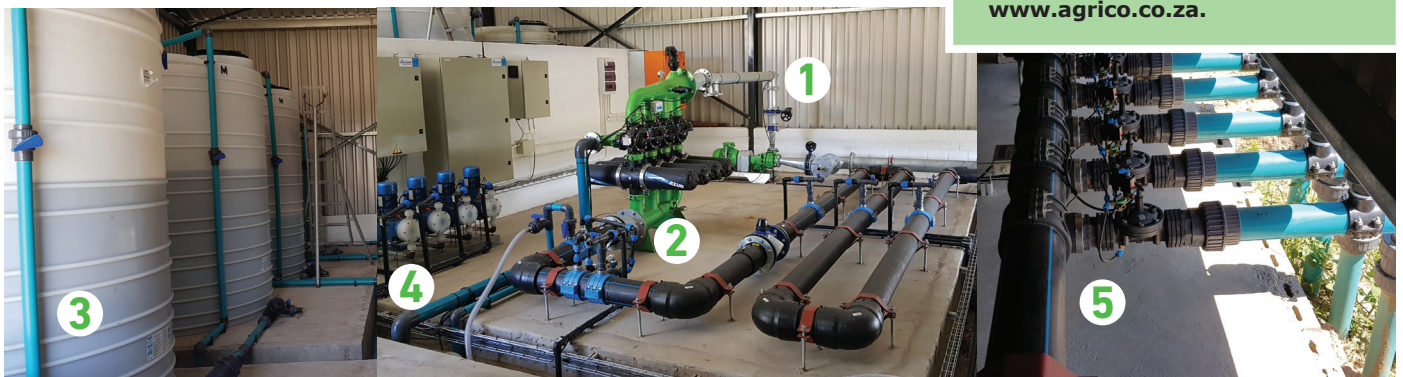
Hydrogen peroxide or enriched oxygen can also be added to the water when needed to prevent sediment building up in the system.

Control valves for the various irrigation blocks are situated in the pump station and are automatically opened and closed by the computer.

Ernst says that the filter and pump station were sized to allow him to potentially expand further. He is also not limited to planting blueberries, and he is currently looking at the viability of citrus. The current system can easily be adapted to suit citrus farming.

"The new system eliminates many irrigation problems: it works like a dream," says Ernst.

Agrico is always ready to help. Contact them at +27 (0)83-455-5423 or +27 (0)21-950-4111. You can also send an e-mail to sales@agrico.co.za, or visit the Agrico website at www.agrico.co.za.



This is the neatly built pump station on Ernst Myburg's farm, Lekkerwater, near Porterville. The pressure pump (1) forces the water through the filters (2). From the fertiliser tanks (3), each substance is accurately measured and automatically added (4) before going to each of the irrigation blocks. Valves (5) that control the irrigation to the various blocks are opened and closed automatically by an irrigation controller.