



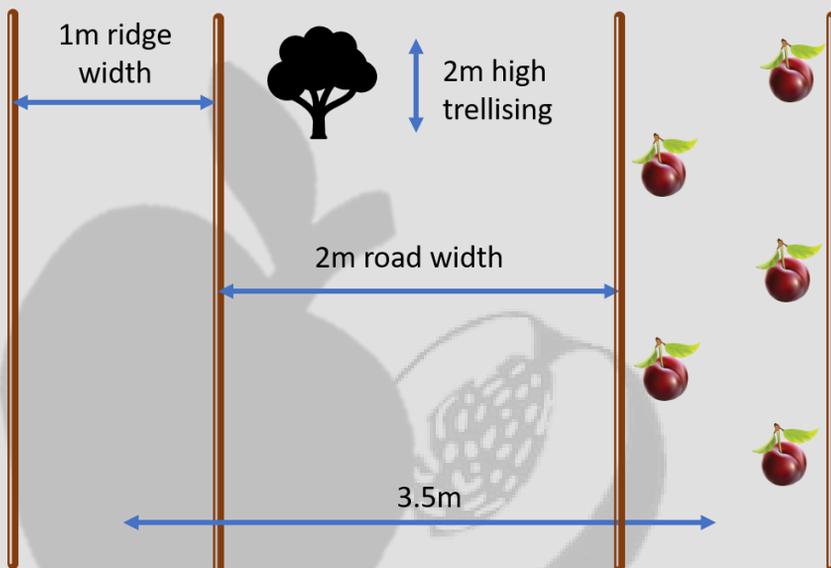
How does your choice of trellising system affect your carbon footprint?

A Boschendal case-study

By Anel Blignaut

Boschendal's commitment to farming sustainably is evident the minute you enter the farm gates. The innovative and sustainable practices used throughout and the commitment to environmental and social sustainability is impressive. The passion and enthusiasm of the staff is tangible and the buy-in of staff is a key factor to the success of any sustainability initiative.

One of the innovative practices that was employed by Jacques du Toit, Managing Director Farm & Estate at Boschendal was to develop a trellising system for plums with a double row of trees on a ridge and to trellis up to a height of only 2m. The trees are planted 1.5m from each other and 1m is allowed between the rows. The shorter trees allows enough sunlight to penetrate the orchard.



What does the CCC benchmark tell us?

Reduce your carbon emissions at farm level by **measuring** and **managing** your hotspots!



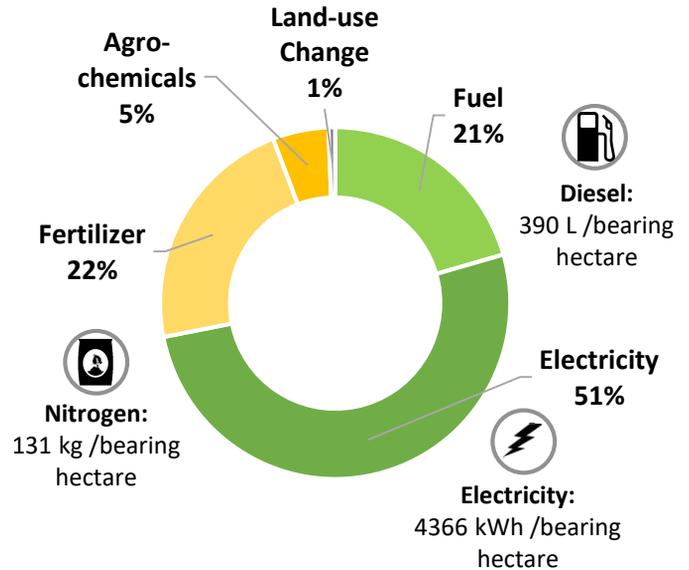
Electricity



Nitrogen fertilizer



Diesel



How does this trellising system and other sustainable farming practices reduce Boschendal's carbon footprint?

It is clear from the figures presented in the CCC stone fruit benchmark that electricity, fertilizer and diesel are the greatest contributors to the carbon emissions at farm level. The trellising system used by Boschendal allowed for approximately 3810 trees per hectare and an increased yield of 20 - 40%. The young trees have a yield of approximately 9 tonnes/hectare by the second leaf crop.

Fuel usage was reduced as a result of the trellising system, as the number of sprays was reduced, and as the sprays are concentrated on a smaller area, less is blown away. On average, a saving of 120 - 150 litre diesel/hectare was achieved because spray pumps did not have to be filled that often. The effectiveness of the sprays resulted in a reduction of approximately 500 - 700 liter/hectare of plant protection products. Not only does the reduced fuel usage lower the carbon footprint, but also the reduced amount of plant protection products used.

When it comes to fertilizer usage, the focus at Boschendal is improved soil health. They apply fertilizer in small amounts, eight times a year to ensure improved uptake and use by the plant. Furthermore, they apply humates and use a combination of cover crops. Jacques confirms that their soil health and high humus content plays a large role in their water saving. They measure the soil moisture content every hour in every hectare planted. This allows precision irrigation and results in the use of 30% less electricity and water. The increased root density in the soil also allows the trees to use the water and fertilizer more effectively. They also make use of perennial nitrogen-binding cover crops that improve the soil texture, reduce compaction and increase soil organisms. The sustainable farming practices implemented at Boschendal contribute to reduced electricity usage for the pumping of water, as less irrigation is required. **This reduces the carbon footprint (kg CO₂e/kg fruit).**

In addition to the production and environmental benefits of the trellising system, there was also an important social benefit. The lower tree height allowed for higher worker productivity and safety, as workers do not have to climb on ladders to harvest the fruit. No time is wasted with the moving of the ladders and men and women can do the work at the same speed.

Carbon emissions and input cost saving goes hand in hand



Optimising your irrigation needs through precision irrigation reduces your electricity bill for the pumping of irrigation water and reduces your carbon emissions.



Optimising the amount of plant protection products used and synthetic fertilizer will reduce your impact on the environment, reduce your carbon emissions and reduce your input costs.



A saving of 120 - 150 litre diesel/hectare will lead to a saving of R1800 - R2250 / hectare at a price of R15/litre. In terms of carbon emissions the diesel saving will result in a saving of 337.2 - 421.5 kgCO₂e/ha.

Contact Confronting Climate Change to start measuring and managing your carbon emissions.

Website: www.climatefruitandwine.co.za

Support email: support@bluenorth.co.za

Support cellphone: 063 688 5593

