

## At a glance



**Who:** Bob and Anne Davie

**What:** beef

**Why:** cutting carbon footprint

**Where:** Phillip Island

**Report:** JOHN PARRY

BEEF producers Bob and Anne Davie are ahead of their time in their quest to minimise their carbon footprint.

Among the strategies the Phillip Island couple are using to reduce greenhouse emissions are trials to restrict cow burps and flatulence.

They are also trying to limit nitrous oxide losses from soils.

Methane from cows accounts for most of Australia's agricultural greenhouse gas emissions, followed by nitrous oxide emissions lost from fertilisers, animal excreta and soils.

Data collected from the trials will be used to help other farmers reduce their carbon footprint and at the same time improve their production and profit.

The Davies have already made significant gains through breeding and good pasture management.

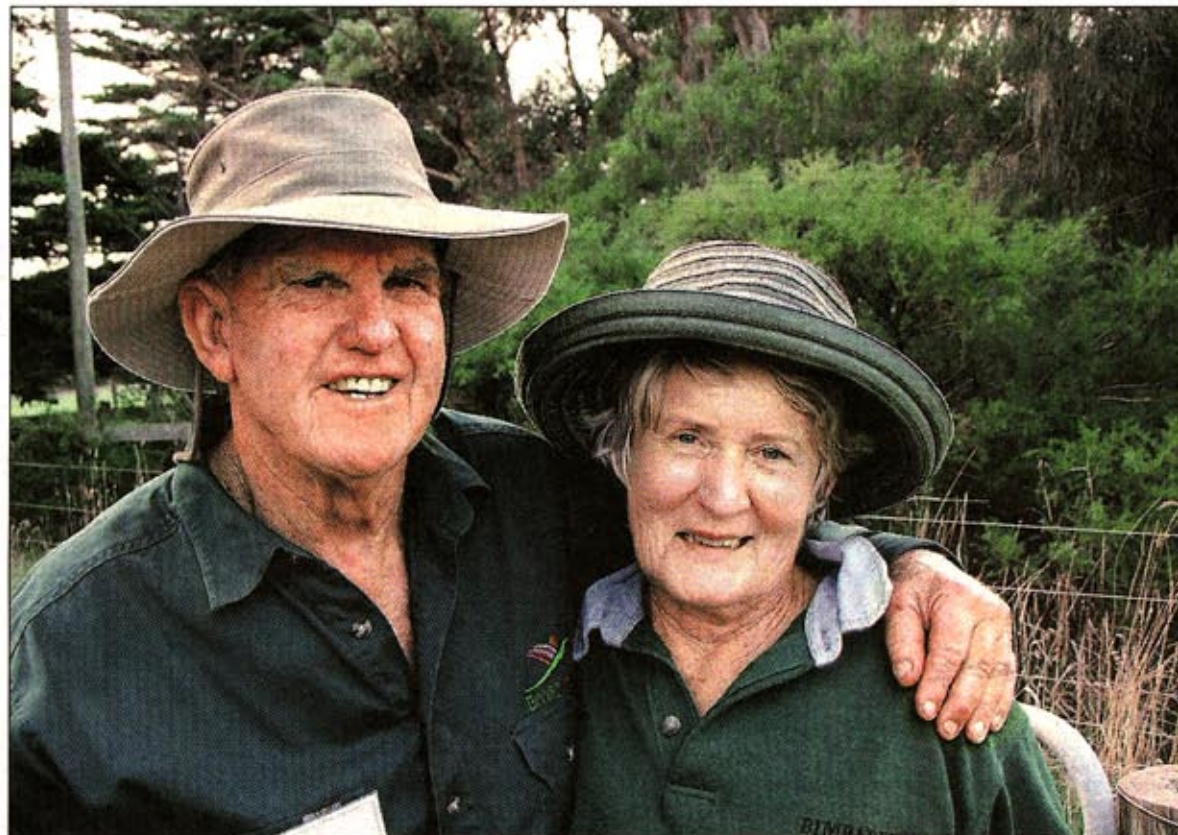
Bob said they were preparing themselves for the day when farmers would have to audit their activities and account for any environmental impact.

He told more than 100 people at a field day on the property last week that genetics and feed management played an important role in reducing methane emissions.

Only high-Breedplan bulls are used and Gene Star DNA testing is used on artificial-insemination bulls to maximise feed efficiency and tenderness.

"Cattle that produce less methane put on weight quickly, and with less feed," Bob said. "The faster the weight gain, the quicker we can turn them over."

Trials have started using two feed additives — a vegetable oil and the wine by-product grape marc — in a bid to further cut methane emissions.



# Bottling the carbon genie

Pasture trials have also started using a new pasture mix to lower methane production and increase soil carbon.

In other measures, Bob and Anne use solar pumps and a windmill, have installed a Quantum heat pump for domestic use and have re-insulated their house.

They have reduced their reliance on mains water by using a bore for stock and reduced evaporation by using a silicone film on their dams.

"Most of the things we've done have been fairly simple, yet they've made a difference," Bob said.

The Davies run 226 head of Angus and Brangus cattle on 120ha and supply beef under the Enviromeat brand.

They have implemented an ISO 14001-compliant environmental management system and are taking part in the Western Port Agricultural Greenhouse Emissions and Resource Efficiency Project.

Scientists say methane represents a significant loss of energy that could be converted into milk or weight gain, and nitrogen losses rob the soil of a valuable nutrient.

They believe diet plays an important part in reducing methane and nitrous-oxide losses.

Methane-producing microbes thrive on high fibre-low digestibility diets (such as poor summer pasture), while nitrogen losses are greatest when diets are high in protein but low in energy (lush spring pasture).

Higher-quality forage is more easily digested and spends less time in the rumen. It also encourages higher performance, allowing stock to be finished sooner or achieve greater milk production over an extended lactation period.

**Trail-blazers:** Bob and Ann Davie are trialling several ways to reduce carbon-pollution emissions from agriculture.

Providing feed with a higher energy to protein ratio results in less nitrogen being excreted in the urine.

Bob and Anne use home-grown silage through summer to provide higher-quality feed to their cattle and feed molasses to improve digestibility.

Their trials with the vegetable oil and grape marc will determine how much of the additives will be needed at various times of the year.

Both products are high in dietary oils, which have been shown to reduce methane emissions and increase milk production.

Grape marc is also high in tannins, which reduce methane production and urinary nitrogen excretion.

The supplements are being added to the feed of 11 steers and three bulls, which have been matched to a control mob of 12 steers and three bulls.

Bob said both mobs would be weighed at intervals to test for any superior weight gain in the trial mob.

The couple are testing a new high-quality pasture mix, Triple Octane, which comprises three ryegrass varieties: crusader, barbaria and ohau.

The Davies rotationally graze over short intervals to maintain good pasture cover and increase soil organic matter.

A further trial is underway to see if allowing the pasture to grow longer will help build soil carbon.

Bob and Anne minimise nitrogen use by taking advantage of the nutrients contained in the dung and urine.

Paddocks are smudged after grazing to put the nitrogen back into the soil to encourage even pasture growth.

Grazing wet paddocks is avoided as hoof damage generates anaerobic conditions that encourage nitrous-oxide emissions.

The Davies have also been using dung beetles to help cycle nitrogen and reduce nitrous oxide emissions, and also have planted thousands of trees to offset CO<sub>2</sub> emissions.

For further details about the project, phone Jenny O'Sullivan on 0427 086 087 or Moragh Mackay on (03) 5678 2335 or 0438 702 240.