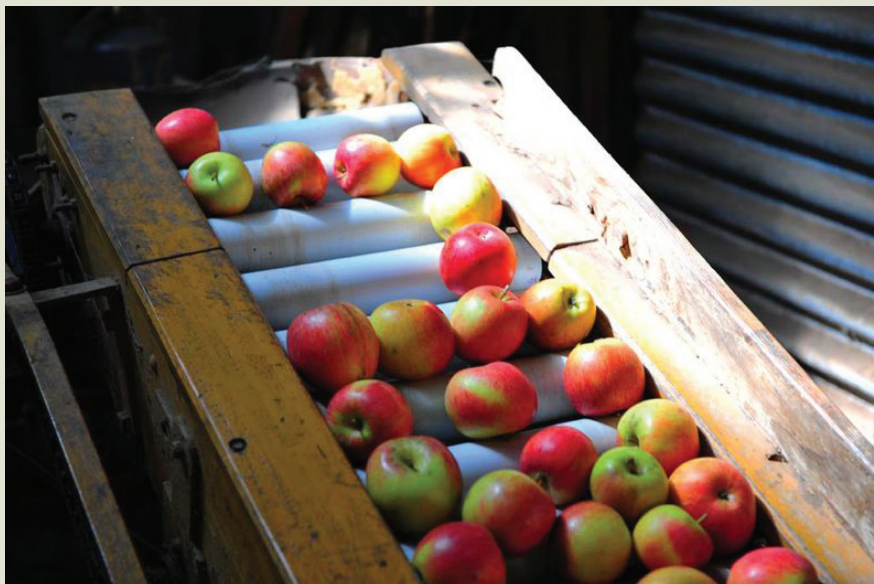




AN APPLE A DAY AT A  
PRICE YOU CAN PAY



*Photo by Mary Canning*

## BILL SHIELDS THINKS THAT APPLES SHOULD NOT BE A LUXURY ITEM

**“They should be an everyday commodity and we should price them so both the grower and the consumer get a fair price.”**



*Photo by Mary Canning*



*Photo by Mary Canning*

Shields' orchard, which includes a roadside store, sits on six hectares with about four hectares under fruit. The property grows mainly apples, but also produces stone fruit, quince and potatoes. The property is located in Bilpin, on the Blue Mountains side of the Hawkesbury Valley, and sits at 618 metres above sea level, in a north-east facing bowl.

Bill's parents bought the farm in the 1950's and Bill took over in the 1980's. When the supermarkets began to dominate the markets in the 1990s, many small producers were forced to leave the industry.

Focussing on their own retail business and the pick-your-own market was seen as a way to remain viable without relying on conventional markets. The proximity to Sydney (1.5 hours from central Sydney) and location on a main highway made the property readily accessible to day-trippers and rural tourists. The refocus of the business has proved successful and, at present, about 40% of the orchard's business is through retail and 60% is pick-your-own.

The number of apple varieties grown on the orchard has expanded, but old varieties have been retained and grafted onto virus-free rootstock. The trees are planted in hedge rows with about 1200-1400 trees per hectare, making them compete against each other and reach maturity earlier, producing more apples sooner.

The trees are small in size and grown from dwarf stock, which removes the need for ladders.

Bill says it is not just apples he is selling – he also sells memories.

“Not only can families make new memories of picking fruit together, we grow the apples that you just can't buy anymore – the Cox's Orange Pippin and Bramleys,” he said. “They bring back so many memories for some people.”

Bill's customer base is split into two parts – the young married couples who want to show their children where fruit comes from and the Europeans aged in their 50s and 60s who come to pick apples because it reminds them of their birthplace.

"It's cheaper than an airfare back to the homeland!" he said.

Although the size of the enterprise has not increased since he took over, he has replanted the entire orchard in the past 15 years. His focus has been to rebuild the soil with a regeneration program to improve organic matter content and pH levels.

Soil carbon is a priority for Bill, because of its positive effect on water retention and crop health with latest soil tests showing soil carbon levels of up to 8%.

"If we get the soil and nutrition right, the tree will be healthy," said Bill.

Soil testing is undertaken every couple of years to make sure the balance is right and tissue analysis is undertaken to make sure the soil nutrients are delivered to the trees.

"Boron and calcium are very important for strong cell walls. They can get out of kilter really quickly, but can also be applied quickly as a top dressing," he said.



*Photo by Mary Canning*



*Photo by Mary Canning*

The soil is a chocolate loam of up to 60cm on top of clay and residual shale. A combination of chemical fertiliser, lime, gypsum, and green manure crops, is used on the farm. Small amounts of the fertiliser are applied several times each year to prevent run-off and soil acidification.

Chill is measured automatically every 20 minutes. The farm averages between 680 -720 hours of chill per year, not cold enough for some varieties of apples.

The average rainfall on the farm is 1320mm. However, Bill reports that since 1980 the number of below-average years has been significant.

"We have had two years with average rainfall, and two years above-average, all the rest have been low," he said. "But it has never been excessively low and seems to be heading back to normal now."

There is 15 gigalitres of water storage available on the farm, which is filled by rainfall from the farm and surrounding properties". The below-average rainfall up until 2008 meant that the dams on the property were not fully refilled for a number of years.

Water analysis is done regularly and recent testing found the water was of drinking quality.

"I'm very careful about not having any exposed soil on the property, and this helps keep the water quality very high," said Bill.

Trees are watered using trickle irrigation at a rate of seven litres/hour. Soil tensiometers are used to measure soil moisture and determine irrigation scheduling. Bill is also involved in a project using satellite imagery to schedule irrigation. The project looks at tree colour, rainfall data and weather conditions and sends an SMS to signal when irrigation should occur.

"Water is such a big issue and this project will help farmers use water efficiently," he said.

The staff requirements of the farm are met by Bill and his wife, who works in the retail store on the farm, and a casual worker. Occasionally pickers are required to help with the harvest. The cost of workers is high, so fallen fruit is left on the ground.

Bill's management style differs from other orchards in that he is not afraid of grass and, outside of the fruit season, allows grass and weeds to grow in the orchard without mowing.

"I like to see grass and weeds growing between the rows and around the trees," he said.

"It shows the soil is healthy, fertile and has good productive capacity. The weeds break down to add more organic carbon back to the soil."

Bill looked at organic production, but found he could not produce an apple that people would want to buy considering the location and generally high rainfall at Bilpin. He uses integrated pest management systems to keep the use of insecticides to a minimum, while managing pest populations.

Codling moth is managed with growth regulator to prevent insects reaching sexual maturity and pheromones to confuse the male insect. Predator insects have been introduced to manage aphid populations. Scale can be a problem, but can be dealt with more easily without the other insect problems.

The effects of temperature and moisture on fungus growth have been well modelled and are measured on farm.

"We know that if there is no infection period, there is no need to treat fungus," said Bill.

"This cuts the use of chemicals on farm, which is good for the soil, the water, and the customer."

He said that he never wants to retire as he is enjoying himself too much, and there is still a lot to improve.

"I have a responsibility to leave the farm in a better condition than when I took it over and I am working to make it the best I can," he said.