

### CASE STUDY: MAINLY POTATOES AND MAIZE

Nic and Alexi Kentish say “*changing to organics was not as painful as we thought it might be.*” This statement might be amusing to some and of interest to others. The reasons that Nic identifies for this relatively smooth change from conventional to organic potato production include the previous adoption of FLOCKCARE, CATTLECARE and the International Pack House Standard ISO9002.

Nic’s Kentish Potatoes and other produce are certified *In-Cconversion* by NASAA.

Figure 52: Nic Kentish with Kentish Potatoes

The main farm produce is potatoes and maize but cattle and sheep and vegetables are also part of the large organic enterprise. The crop area is contained in 16 plots of five hectares, 80 hectares in total. The crop rotation is eight years: maize is planted on maize for about seven years and each section is planted to potatoes once in the eight years. The farm is managed so that two sections (10 hectares) grow potatoes each year. In winter, a green manure crop of oats, Persian clover (*Trifolium resupinatum*) and vetch follows each maize crop and each potato crop. Sheep and cattle graze on the top half of the green manure crop and the remainder is ploughed in before the maize or potatoes are sown. Neighbours grow additional potatoes under contract to Nic, not organically but under biological practice.



Figure 53: Variety in the vegetable patch



The enterprise employs five permanent staff and 8 seasonal labour as required.

The average annual rainfall is 27 inches or 700 mm; winters are wet and cold and half the rainfall occurs between May and August.

Potatoes and maize are irrigated from an underground water supply at two and a half to three mega litres per hectare during the growing season, as required.

### Potatoes

Figure 54: Potatoes from the paddock



Figure 55: Washing potatoes



Figure 56: Potatoes about to be graded



Figure 57: Grading and quality control



Nic explains that the year before certification is the most difficult because you have a potentially lower volume of production without the premium organic price. Nic quotes advice he received from Dr Arden Anderson '*don't grow organic produce unless you can make a profit on the conventional market*'; in other words, don't rely on the premium price for your profit. Nic is conscious of not letting costs blow out: input costs are high in these early years but will come down as soil fertility improves with organic farming practices. Until his recent retirement and under conventional practices, Nic's father produced 6000 tonnes per year on 160 ha (37.5 t per ha) but Nic's crop was 250 tonnes from 12 ha (20.8 t per ha) in his first year of organic production. The former large scale production area was at a cost to eventual soil fertility and as fertility improves Nic expects his production to climb to earlier levels; the difference will be the sustainability of the production with organic techniques. The obvious advantage of sustainable production is influencing neighbouring potato growers to consider organics.

Figures 58 a and b: Boxed or bagged for market



The potatoes are marketed in Melbourne, Sydney and Adelaide. Initial grading, quality assurance and some packaging is done in the pack house on the farm. Some lines are sold to be graded again and marketed by *Red Gem Packers* as Kentish Potatoes agents in the major cities.

Nic has made some interesting observations as he has changed his farming methods. For example, when he stopped using fungicide as a preventative treatment he had the same amount of fungus in the crop as he had before: the chemical made no difference! This type of observation influenced his decision to become organic but as he says, *the pathway is a marathon not a sprint*. However, he observes that he has less target spot and mildew than conventional farmers in the district. And he quotes Elaine Ingham *Respect your soil. If you wouldn't put the chemical on your kids, then don't put it on the soil*.

**Weed control.** Strategic inter-row cultivation was once used for weed control but now Nic has no mechanical measure for weed control other than growing a healthy crop of potatoes so that row closure (canopy formation) happens quickly and weeds are smothered. In addition Nick has changed plantings from four rows to six rows in the same width (108 inches) so that the canopy forms more quickly.

**Soil fertility.** The soil is a limestone based black sand. Before the potato seed is planted at the end of October or early November

- compost is applied at eight tonnes per hectare
- BD 500 and BD 501 are applied in autumn
- a green manure crop is grown: oats, giant clover (Persian), vetch
- the green manure crop is mulched about September (if the weather isn't too wet)
- compost tea or fish composts or a permitted source of nitrogen is added to the mulch to promote its break-down, especially in cold weather.

Potatoes are harvested four to five months after planting. Before marketing they can be held in cold storage if necessary.

Nic prefers to buy organic compost rather than produce it on farm but he finds it difficult to obtain the aerobic, bacteria dominant, carefully managed product essential for his crop.

### Maize

**Nitrogen.** Compost tea and composts from fish and kelp provide some of the large amounts of nitrogen that the maize requires and soil microbes that are part of the soil food web contribute to the total available nitrogen.

**The challenge.** The weeds fat hen, *Chenopodium album*, and volunteer potato are challenges for maize production. Nic says *I won't lose my nerve over the weeds because these are early days in my organic maize production and I will work at a solution with soil balance.*

### Livestock

**Organic lamb.** Nic runs 2000 Coopworth ewes for prime lamb production. He keeps replacement ewes and sells the lambs at 40 to 50 kg live weight; half to local butchers and half through the meatworks.

Foxes can be a problem for the sheep; a shooter is employed to keep fox numbers down. Nic is considering using alpacas to protect the sheep; he prefers alpacas to protective dogs because they graze with the sheep and don't need someone to feed them each day and they are not a problem when working dogs are used with the mob.

**Organic beef.** The cross-bred beef herd has 550 cows and is a composite of Hereford, Red Angus, Simmental and Gelbvieh. Nic leases the breeder herd from a co-operator to avoid having excessive capital tied up in stock. The progeny are sold to backgrounders and local butchers. Organic beef has a minimal premium and so this production system must have a very similar gross margin to conventional production.

## CASE STUDY: VEGETABLES, NUTS, STONE FRUITS, PASTURE HAY

*Bossy Boots Farm* at Balingup is in the south west of Western Australia, 206 km south of Perth and 36 km south-east of Bunbury. The total farm area is 32 hectares and this includes seven hectares of intensive horticultural production. The area of old growth forest on the hills behind the property is the large catchment for the very big dam on the property. The dam is built with a series of silt traps that are examined for herbicide that may have eroded from the forest, especially from fire breaks in the forest; however no problem has ever been detected.

Figure 59: Winter crop in the foreground, seedling emerge in the background

Tom Benson has been a certified organic grower for more than nine years. He is a member of BFA (Biological Farmers of Australia) and is certified with ACO (Australian Certified Organic) and he has had experience as a state representative and as a certifying inspector for BFA. He has one full-time worker and additional seasonal workers.