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## **Embracing Diversity and Environmental Sustainability with On-Farm Food Processing**

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### **THE PROPERTY AND ITS ENVIRONMENT**

Drover's Rest is located in a bushland setting 8 km east of Bridgetown in the South West of Western Australia. The property is 86.8 Ha in area with only approximately 20% cleared. The uncleared portions are jarrah and marri regrowth forest with understorey in very good condition. Soils vary from sand through sandy loam to gravel. The property has two winter stream beds and a permanent wetland, considered valuable by nature conservationists, watered by an underground stream.

Drover's Rest was purchased by the present owners in 1995. It was previously used for grazing only. The property takes its name from droving operations early in the area's history, when stock was driven from the east to the railhead at Bridgetown and rested at Drover's Rest presumably because of its permanent water supply.

The property is surrounded on the north, on the east and on part of the southern boundary by the CALM Hester forest conservation area. The remainder of the boundary adjoins forest on private properties. These forests provide a buffer to surrounding farming activities for organic production and add potential to the property as a future tourist destination.

### **WATER SUPPLY AND IRRIGATION**

Soon after purchasing the property, the owners constructed a large dam, with an estimated storage capacity of about 20 to 30 million litres. It is spring fed by fresh water, and generally fills each year except in drought years. It was carefully located so as not to interfere with the adjacent wetlands. Overflow from the dam flows into the wetlands and then into a winter stream. In order to decrease run off into the Blackwood River, a desirable outcome under environmental management initiatives, water from this winter stream is pumped via a shallow bore back into the dam when the dam is not full. The dam contains an island as a haven for bird life.

The dam is currently a back up water supply for the irrigation system. The main irrigation water comes from a bore, again located away from the wetlands. Water-saving drip irrigation systems are used for all growing areas plus the property landscaping. The entire irrigation system runs automatically and can be reprogrammed depending on the degree of watering required. Water quality and underground reservoir level are monitored regularly in order to better understand the environmental impact of water usage.

### **SUSTAINABLE FARMING AND ENVIRONMENTAL MANAGEMENT**

By farming organically, we are managing our property in a sustainable way. We continue to improve our soil fertility with the addition of compost and the use of mulching for weed control. By not using artificial chemicals in the form of pesticides, herbicides or fertilizers, we are protecting the soil microflora as well as the environment at large. In addition to our organic practices, we have undertaken other initiatives to both protect and enhance the environmental heritage of our property.

Drover's Rest was registered in 1999 by the current owners as a "Land for Wildlife" property with the Western Australian Government scheme for voluntary nature conservation. A Land for Wildlife officer has surveyed the property to assess the existing condition of

vegetation, and suggested recommendations for forest maintenance and regeneration, which the owners are undertaking. Drover's Rest is part of a wildlife corridor in the region east of Bridgetown, which connects wildlife sanctuaries through farmland remnant vegetation from the Hester forest conservation area to the Blackwood River to the south.

In addition, Drover's Rest has become certified as a "BestFarms" member of a regional scheme to manage the environmental impact of member farms in the Blackwood Basin Catchments Group. Each farm works under an audited Environmental Management System (EMS) aimed at farming and managing land in a sustainable manner both locally and within the catchments area. The EMS addresses issues such as water use efficiency, water quality, soil fertility, soil structure and health, biodiversity, weed management, waste reduction etc., and was the first EMS accredited by the BestFarms group other than for their own demonstration farm set up at the same time.

Under our own farm Environmental Policy, we work with the environment, including its insects, birds and animals to maintain a balanced system in which pest control is self managed. We have no need to use pesticides. For example, to protect our crops from animals, we have installed high fencing around all growing areas, along with rabbit mesh buried at the bottom, thereby excluding both rabbits and kangaroos. We believe that biodiversity is the key to our success. *Our efforts were recognised in 2005 by the award of a National Landcare Award.*

### **FARMING OPERATIONS**

Drover's Rest has been one of the large organic strawberry producers Australia wide, with approximately 30,000 to 40,000 plants grown each season. However, we cut back production recently due to a concern over our water supply. In addition to strawberries, we grow rubus berries, and occasionally, vegetables, all under organic certification.

The strawberry plants are grown on mounds with black plastic mulch film used for weed control. Irrigation is carried out with dripper lines installed under the plastic. Before planting, the soil is prepared with compost, organic fertilizer and trace elements added in accordance with deficiencies determined from soil analysis. Additional top-up "fertigation" is carried out by adding fish and seaweed based liquid fertilizers through the irrigation lines.

Cold chain management is an important part of quality control and is given particular emphasis at Drover's Rest. After picking, the fruit is placed immediately into a cool room, either the packing shed cool room, or a portable refrigerated cool room mounted on a trailer.

The packed fruit ready for market is transported in Drover's Rest's own refrigerated truck to a refrigerated transport company based in Manjimup approximately 30 km from Bridgetown, from where it is transported to Perth, either for the Canning Vale Markets, or for air freighting to Sydney, Melbourne, Adelaide or Brisbane. The refrigerated chain remains unbroken. Fruit picked on one day can be in the Canning Vale Markets the next afternoon and in the eastern states the following day. Quality of our produce remains paramount.

Soil preparation before planting is given strong emphasis, and part of this preparation is the addition of compost in order to increase soil fertility by enhancing humus content. Because large quantities of compost are required, compost can be made either on the farm or transported to the farm from a certified organic compost supplier. Our objective is to gradually improve the productivity of our soils over time in line with our over-riding vision of a viable, sustainable operation which protects or enhances the environment.

### **DIVERSIFICATION INTO ON FARM FOOD PROCESSING**

Strawberry production results in about 30% of the fruit picked being unmarketable for the fresh market. We were able to sell a portion of this "seconds" fruit into the frozen strawberry market, but insufficient to keep up with production. We tried value adding by making jam, but this market is over supplied and not high volume. It was evident that further value adding would be necessary, so in 2004, with the assistance of a small State Government grant, we hired a consultant to develop a business plan for value adding our "seconds" fruit. We did not anticipate then that we were about to embark on a diversification venture which would develop into the State's only fully dedicated certified organic food processing facility for fruits and vegetables.

Initially, we came up with an idea to produce frozen organic fruit snacks, similar to frozen yoghurt snacks, but all fruit. In order to make the venture large enough to be viable, and to produce a range of fruit flavours, it was evident that we would need to buy in fruit from other growers. Seeing that this would lead however to a plant involving significant capital expenditure, we explored external funding sources. With the help of the South West Area Consultative Committee, along with a business plan developed by our consultant, we applied for a Regional Partnership grant from the Federal Government. The application was successful, and the “Frozen Organics” project was born. During construction of the new factory, and selection of equipment, a change in direction was made, which came about as we further researched the market and studied processing techniques. It became evident that a wider market and easier distribution would be available to us if we had a shelf-stable product (requiring neither freezing nor refrigeration). Thus, we introduced a pasteurization cycle into the process to enable shelf lives of 12 months or more.

The factory building was completed in late 2005, and an additional two years has elapsed during fit-out, procurement and installation of equipment and services; this unanticipated length of time taken partly because of the process change. Our equipment includes a pulping machine, which can handle a wide variety of fruits, cooking and blending equipment to make purees, cup filling and lid sealing equipment, a metal detector for quality control, and a pasteurizer, together with associated cool rooms, freezers and an administration block. The overall investment for the factory is nearly \$500,000. We now are in a position to manufacture fruit and vegetable purees, soups, sauces, jams, pastes, either shelf stable, refrigerated or frozen, in a variety of packaging including plastic tubs with heat sealed foil lids, jars and bottles. We could do contract processing if our capacity allows.

The factory has only just started up, so operating experience is limited. It will certainly provide an avenue to use our “seconds” and those of other organic growers in the State. However, although not initially anticipated, the diversification will help us to broaden our income base and help counteract reductions in the income we receive from growing produce as a result of: (1) decreasing availability of farm workers (2) potential decreasing water supply (3) larger organic strawberry growers recently coming on the market in WA, thereby increasing competition.

## **MARKETING**

Right from the beginning of our diversification planning, we were determined not to move away from our commitment to protect the environment and support sustainable agriculture. This was made a cornerstone of our Regional Partnerships application. This has been achieved by processing only certified organic produce, and furthermore, the use of other growers’ organic produce may encourage organic farming by providing a better market for “seconds”. In addition, being such a small processor, we believed a “niche” market was appropriate for us, which the organic market is. From our experience in making jams, where the market is saturated, a higher volume market was sought, and we believe shelf stable fruit purees will fall into this category. These products are popular in the USA and Europe, and are popular in Australia in the conventional (non-organic) form, but are not made in the organic form elsewhere in Australia in any quantity. Furthermore, the organic market is expanding faster than the conventional one.

Another overriding factor in defining marketing direction, right from the beginning as reflected in our Regional partnership application, has been the aim to provide both quality products, and nutritious ones, but with emphasis on food for children. There is now evidence emerging that organic products are more nutritious than conventional ones. With these factors in mind, we have trade marked a brand called KidSnak, with its own logo, under which we will market a range of certified organic snack foods for kids’ (and adults’) lunch boxes comprising primarily fruit purees in small tubs. Since we started this whole process, interest in snack food for children has grown immensely, which can only help the diversification process upon which we have embarked.