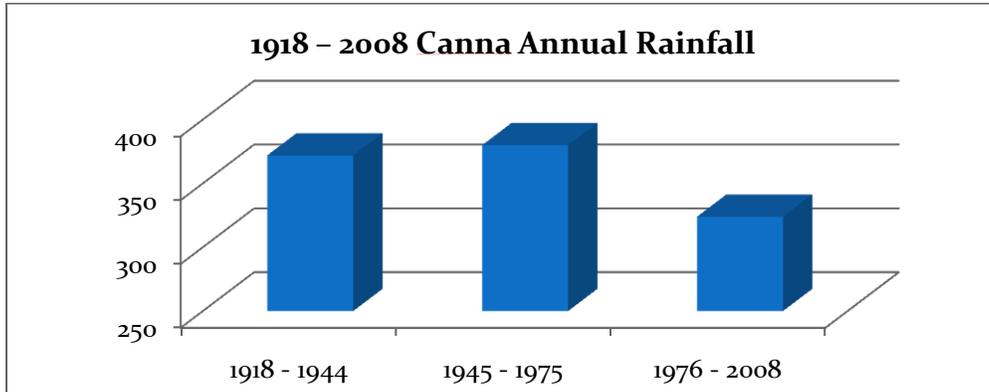


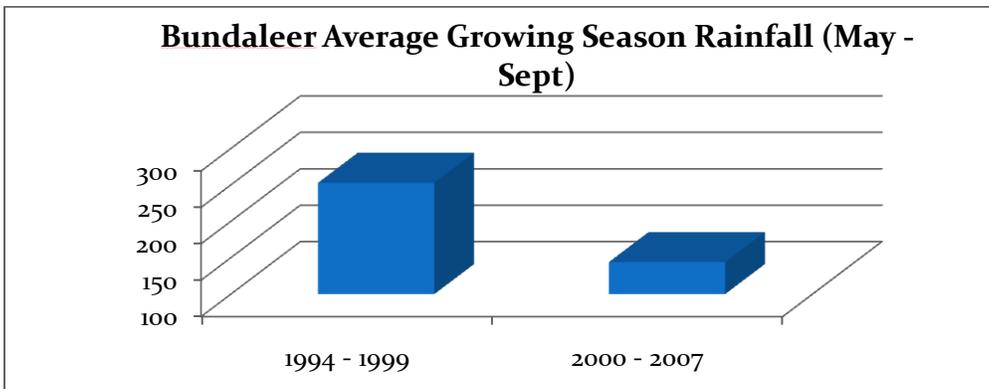
# Appendix

## Appendix 1

Canna is a railway siding which is an official weather recording station about 15 km from our farm. Bundaleer is the home farm which on average records a little less than the Canna station.

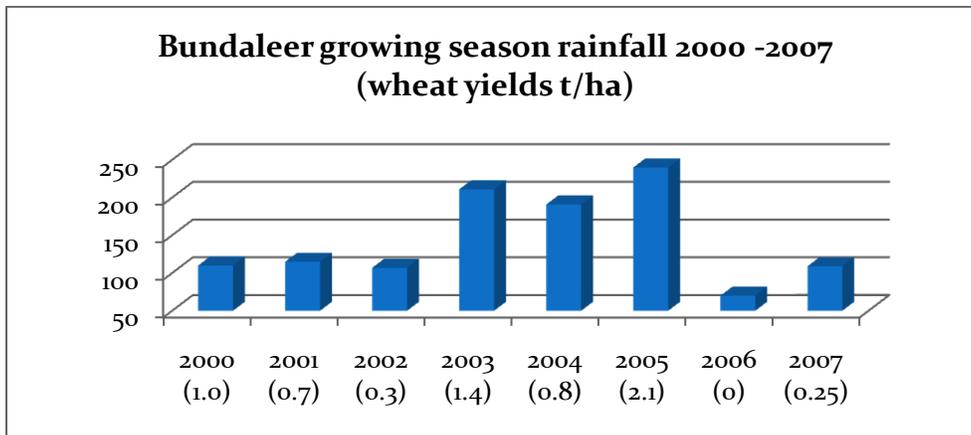


45 - 75 annual rainfall 380mm 76 - 08 annual rainfall 324mm **15% reduction**



94 - 99 = 253mm average growing season rainfall 00 - 07 = 144mm average growing season rainfall

**43% reduction**



1990 - 1999 average wheat yield = 1.80T/ha

2000 - 2007 average wheat yield = 0.80t/ha

**55% reduction in yield**

## Appendix 2

# Wheat Biotechnology Commercialization

Statement of Canadian, American and Australian Wheat Organizations

May 14, 2009

In the interest of expressing support for more efficient, sustainable and profitable production of wheat around the world, the undersigned organizations have approved the following joint statement concerning commercialization of biotechnology in wheat:

1. Wheat is a vital food to all peoples of the world and we believe that by developing higher yielding better quality wheat varieties we can better supply the world with wheat food products.
2. One important tool to help feed the world into the future is biotechnology. Basic agronomic improvements to wheat like strengthening disease and insect resistance, enhancing wheat's use of soil nutrients and water, increasing its tolerance to weather extremes like drought and frost, are all possible with biotechnology. Another critical area for biotechnology is to improve the nutritional aspects of wheat to facilitate healthier living for people all over the world. Biotechnology is not the only answer to these questions, but it will be a significant component in solutions.
3. In many of our production areas, wheat production is under pressure from competing crops which, through the application of biotechnology, have achieved higher productivity, reduced input use, and other benefits not available in wheat. As a result, the historic area of wheat production has declined in many areas and economics are driving producers away from wheat and into other crops if they have alternatives. If wheat continues on a non-biotech course, then farmers will continue to devote a greater share of their acreage to biotech crops, where profitability is relatively greater, resulting in lower world wheat production than would otherwise be the case.
4. In general, wheat yields are on a very slow growth trend in comparison with competing crops, and the longer it takes to increase the growth rate the bigger will be the hole from which the industry must climb.
5. Biotechnology is a proven technique to deploy traits of interest with a high degree of precision in agricultural crops. Crops derived through biotechnology are subjected to strict regulatory scrutiny before commercialization. Over 10 years of global experience with biotechnology has demonstrated a convincing record of safety and environmental benefits as well as quality and productivity gains.
6. Lack of private and public investment in wheat research has left wheat development behind the advances in competing commodity crops, and has also led to a shortage of scientific expertise in wheat research generally. By providing an opportunity for private companies, the level of activity in wheat research will expand and attract a new generation of scientists into the field.

In light of these resolutions, we will work toward the goal of synchronized commercialization of biotech traits in our wheat crops. While none of us hold a veto over the actions of others, we believe it is in all of our best interests to introduce biotech wheat varieties in a coordinated fashion to minimize market disruptions and shorten the period of adjustment. We are also committed to working with other stakeholders to address their needs and concerns as we travel the road to commercialization.



Grain Growers of Canada  
Western Canadian Wheat  
Growers Association U.S.  
Alberta Winter Wheat  
Producers Commission



National Association of  
Wheat Growers  
Wheat Associates  
North American Millers'  
Association



Grains Council of Australia  
Grain Growers Association  
Pastoralists and Graziers  
Association of Western  
Australia (Inc.)

## Appendix 3

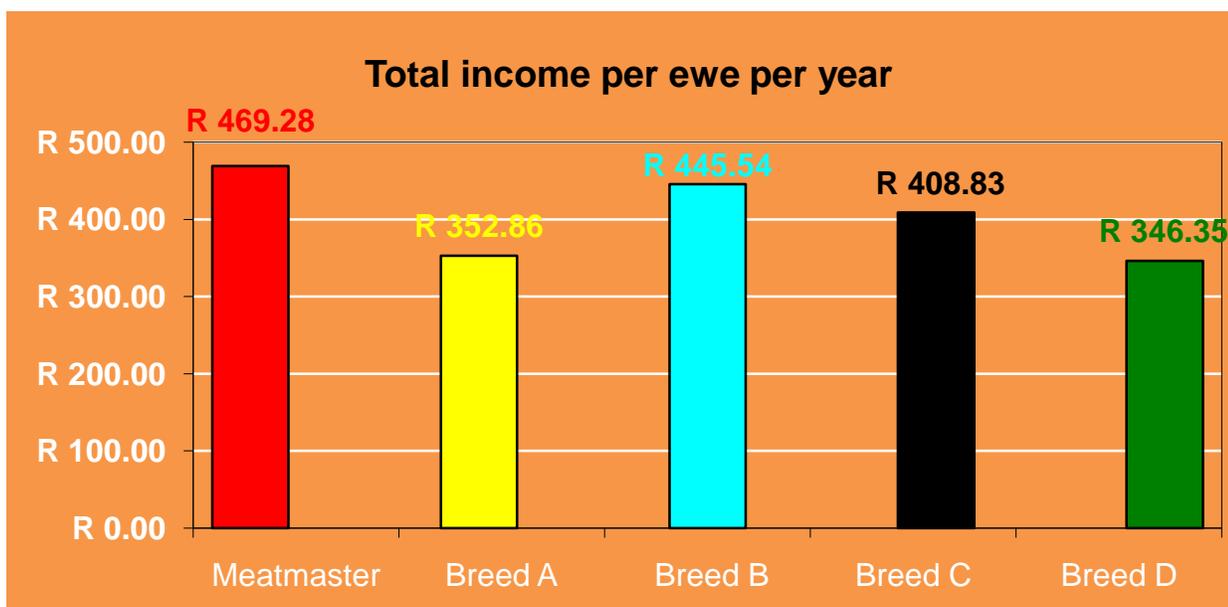
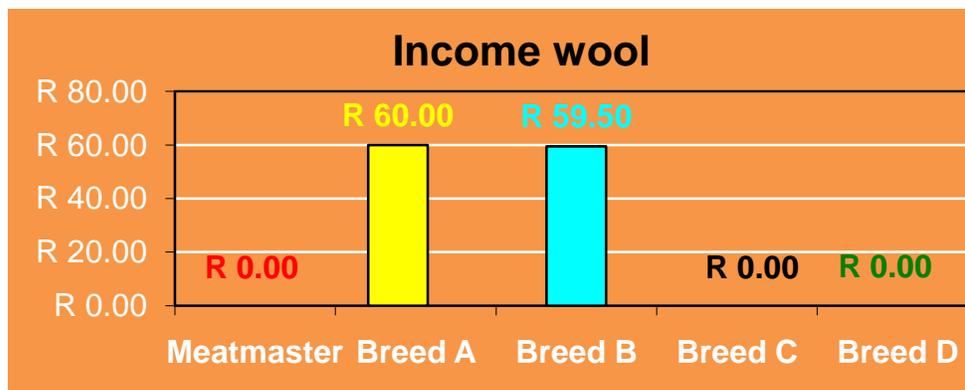
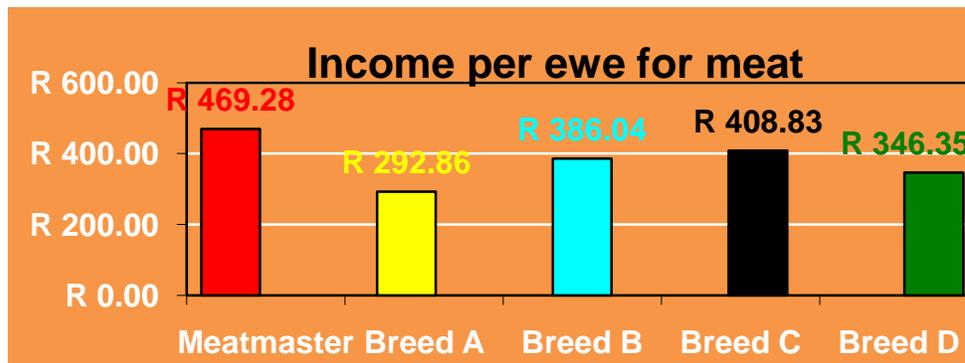
### Van Rooy Traits

- White, polled with no wool. Colour is discriminated against both in Australia and South Africa
- Extremely hardy in dry conditions. Often farmers in South Africa will run the van Rooy on the worst veld and have other breeds on the best veld.
- Highly fertile
- Excellent body conformation
- Fast growing
- Low cost – no shearing, crutching, muelsing and in South Africa's case no vaccination and drenching
- Strong herding instinct- soft on fences

## Appendix 4

These are the results of performance testing Clynton Collett carried out on his property when he was running a number of sheep breeds at the same time. From these results Clynton consolidated his sheep breeds back to the Meat Masters and Afrino as these were the ones he saw as having the greatest potential from a stud breeds perspective. The monetary value is the South African Rand.

Red = Meatmaster    Yellow = SAMM    Blue = Afrino    Black = Dorper    Green = Damara



## Appendix 5

### Meatmaster Breed Standards and Characteristics

When selecting the genes necessary for the development of the Meatmaster all emphasis where placed on two aspects for consideration.

- What a sheep breed needs to keep costs as low as possible.
- What a breed needs for high fertility and production to maximize income.

The Breed Standards are thus very unlike any other sheep breeds. They where set up specifically to achieve what is set out above.

#### 1) Coat Colour and Skin Pigment

Any colour or combination of colours is acceptable. Good skin pigmentation around the eyes and over the ears is however essential.

*Reason:* To prevent cancer, eye infection and for stronger hoofs.

#### 2) Head and Horns

- Ewes must be feminine tending to be polled.
- Rams must be masculine also tending to be polled.
- Lite horns in both sexes is however acceptable.

*Reason:* Easier to manage in sheep yards, less vulnerable to fly strike with horn injuries.

#### 3) Coat Covering

Mainly short shiny hair with an underlying blanket of fluffy fine wool. The breed must never be shorn thus natural shedding ability of coat is essential.

*Reasons:*

- Lambs to service - 0 °C winter temperatures as well as extreme heat tolerance.
- Protection from ticks and flies (no fly strike)
- No shearing costs and danger times with weather after shearing.

#### 4) Conformation and Legs

The sheep must be of average size with a functional efficient body conformation and well placed legs with excellent walking ability.

*Reason:* Easy lambing, enough meat with good movement.



## 5) Tail

The tail must have a good attachment, preferably not be longer than the hock and have a neat wedge shape with only a moderate amount of fat. It must never be necessary to have the tail taken off.

*Reason:* Prevent ticks and fly strike and also no stress or possible infection with tail cutting, less work.

## 6) Herd Instinct

The breed must have a strong herd instinct.

*Reason:* Vital for better management in rugged bush or mountainous regions. Prevents wandering and going through fences. Protect themselves and their lambs from predators.



## 7) Enforced Selection to Achieve the Following:

- Highly fertile sheep.
- Good mothers that rear their lambs adequately.
- Virile rams with excellent serving ability.
- Sheep with a good walking ability.
- Lambs that will reach a slaughter mass of 12kg to 25kg A2 and A3 at 5 months of their mothers.
- Breeders are encouraged to breed sheep suited to their environment and feeding conditions. Different types are thus allowed.
- 12kg to 15kg carcasses putting on more fat and less muscle to be sold at 3 months for the harsher dry and arid areas.
- 15kg to 20kg carcasses with moderate fat and more muscling for the largest part of our sheep farming areas.
- 20kg to 25kg carcasses with good muscling for the grain and pasture areas of the country.

(Meatmaster website, 2009, [http://meatmaster.studbreeder.com/breed\\_information.html](http://meatmaster.studbreeder.com/breed_information.html))

## Appendix 6

### Water Harvesting Techniques from around the World

#### Macro Water harvesting

Israel



Acacia in 80mm annual rainfall zone Israel



Olive trees Israel – 80mm annual rainfall



Flood control and dispersal South Africa



## Micro Water Harvesting

Loader created micro catchment SA



Brush laid on ground SA



ICARDA – Syria



ICARDA - Syria



ICARDA – Syria



ICARDA - Syria



Water catchment for cropping between rows –Syria



Israel



## Appendix 7

### Declared plant in Western Australia

### Prickly pear (*Opuntia* spp.)

#### Declaration

(Code: C= City; S=Shire; T=Town)



#### Category : P1

**Location :** For the municipal districts of Ashburton (S), Broome (S), Carnarvon (S), Derby-West Kimberley (S), East Pilbara (S), Exmouth (S), Halls Creek (S), Meekatharra (S), Murchison (S), Port Hedland (T), Ravensthorpe (S), Shark Bay (S), Upper Gascoyne (S), Wiluna (S), Wyndham-East Kimberley (S).

#### Category : P2

**Location :** For the municipal districts of Ashburton (S), Broome (S), Derby-West Kimberley (S), East Pilbara (S), Halls Creek (S), Meekatharra (S), Port Hedland (T), Ravensthorpe (S), Wiluna (S), Wyndham-East Kimberley (S).

#### Category : P4

**Location :** For the municipal districts of Carnarvon (S), Exmouth (S), Murchison (S), Shark Bay (S), Upper Gascoyne (S). **Standard Control Codes (these may vary for individual plants)**

<p style="text-align: center;"><b>P1 REQUIREMENTS</b> Prohibits movement</p>	<p>The movement of plants or their seeds is prohibited within the State.</p> <p>This prohibits the movement of contaminated machinery and produce including livestock and fodder.</p>
<p style="text-align: center;"><b>P2 REQUIREMENTS</b> Aim is to eradicate infestation</p>	<p>Treat all plants to destroy and prevent propagation each year until no plants remain. The infested area must be managed in such a way that prevents the spread of seed or plant parts on or in livestock, fodder, grain, vehicles and/or machinery.</p>
<p style="text-align: center;"><b>P4 REQUIREMENTS</b> Aims to prevent infestation spreading beyond existing boundaries of infestation.</p>	<p>The infested area must be managed in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery.</p> <p>Treat to destroy and prevent seed set all plants:</p> <ul style="list-style-type: none"> <li>• within 100 metres inside of the boundaries of the infested property</li> <li>• within 50 metres of roads and highwater mark on waterways</li> <li>• within 50 metres of sheds, stock yards and houses</li> </ul> <p>Treatment must be done prior to seed set each year. Properties with less than 2 hectares of infestation must treat the entire infestation. Additional areas may be ordered to be treated.</p>
<p style="text-align: center;"><b>Special considerations</b></p>	<p>In the case of P4 infestations where they continue across property boundaries there is no requirement to treat the relevant part of the property boundaries as long as the boundaries of the infestation as a whole are treated. There must be agreement between neighbours in relation to the treatment of these areas .</p>

# Appendix 8

## Western Australia Agricultural Rainfall Zones

