



Climate Clever Beef

It is estimated the beef industry is contributing 79% of greenhouse gas (GHG) emissions produced by agricultural practices in Australia, mostly in the form of methane from livestock. Branding, growth and death rates are not only the key profit drivers of any breeding business but directly influence total GHG emissions as well as emission intensity. Herd and FarmGas modelling estimates GHG emission intensity ranges from 11.7 to 23 tonnes of carbon dioxide equivalents (CO₂e) per tonne of liveweight sold or turned off annually. Total GHG emissions range from 1,764 to 5,442 tonnes CO₂e per enterprise.

Table 1. Oakleigh breeder enterprise (Kidston).

Herd, liveweight sold and GHG emissions	2012
Number of breeders	2,870
Liveweight sold	411 t
Total greenhouse gas emissions	5,442 t
Greenhouse gas emissions per tonne of liveweight sold	13.24 t CO₂e

Table 2. Blanncourt breeder enterprise (Georgetown).

Herd, liveweight sold and GHG emissions	2011
Number of breeders	1,533
Liveweight sold	405.7 t
Total greenhouse gas emissions	4,747 t
Greenhouse gas emissions per tonne of liveweight sold	11.70 t CO₂e

Table 3. Greenhills breeder operation (Georgetown).

Herd, liveweight sold and GHG emissions	2011
Number of breeders	2,750
Liveweight sold	308 t
Total greenhouse gas emissions	4380 t
Greenhouse gas emissions per tonne of liveweight sold	14.22 t CO₂e

The FarmGas Model was also used in 2012 to estimate the emission of carbon dioxide equivalents (CO₂e) from the herd and the overall beef enterprise on Karma Waters. Total CO₂e emission each year steadily decreased from 1,764 tonnes with the current bullock turnoff to 1,525 tonnes if the Karma Waters production system moved to selling weaners. However, emission intensity improved, with CO₂e per tonne of liveweight sold increasing from 23.2 tonnes for bullock turnoff to 28.7 tonnes for a weaner operation. Gross margins per adult equivalent (AE) steadily decline as turnoff age decreases, with weaner gross margins nearly \$15/AE behind the current bullock operation.

Table 4. Karma Waters breeder enterprise and bullock turnoff (Mount Carbine).

Greenhouse gas emissions	Turnoff 4.5 years	Turnoff 3.5 years	Turnoff 2.5 years	Turnoff 1.5 years	Turnoff Weaners
Total GHG emissions (t CO ₂ e/year)	1,764	1,652	1,587	1,560	1,525
GHG emissions/AE (t CO ₂ e/AE)	1.76	1.65	1.59	1.56	1.53
GHG emissions/turnoff (t CO ₂ e/t liveweight sold)	23.2	23.2	24.6	26.6	28.7

Further information

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