

PigGas Report 46 – 524 sow, farrow to finish, conventional and deep litter piggery, SA.

December 2014



Production details

This is a medium sized family owned conventional and deep litter piggery on two sites - a breeding site and a growing site. Weaned piglets are transferred from the conventional breeding site to the growing site at 3 weeks of age for growing to market weights. All sheds on both sites are naturally ventilated except for the farrowing shed on the breeding site which is mechanically ventilated and evaporatively cooled. The weaner pigs are housed in straw-based deep litter sheds at the growing site. Most pigs are sold into domestic markets at an average of 98 kg live weight. Some gilts and boars are sold as breeding stock to other piggeries at 120 kg live weight.



Feed consumption

The majority of cereal grains used in feed rations are purchased off-site. These are milled and mixed on-site into dry and liquid feeding rations for the different classes of pigs on both sites. Dairy and food industry by-products are also used in the rations. Total feed consumed by all pigs is 3,187 t/yr.



Sales/Tranfers

11,660 pigs/yr are sold with a total dressed weight of 900 t/yr.



The National PigGas Extension Project is funded by Ian Kruger Consulting, the Australian Government and Australian Pork Limited.

Ian Kruger Consulting

PigGas Report 46 – 524 sow, farrow to finish, conventional and deep litter piggery, SA.

December 2014

Waste management systems

The conventional sheds have a combination of flushed and underfloor pit storage (pull plug) systems. On each site, effluent is regularly flushed and drained from the conventional sheds to a primary anaerobic treatment pond which is followed by a further 1 or 2 ponds which store and evaporate effluent. On the growing site, the deep litter weaner sheds are filled to about 300 mm depth with cereal straw which absorbs manure.



Manure reuse systems

A proportion of the effluent from the anaerobic and subsequent holding ponds is evaporated each year. In addition, the primary anaerobic ponds are mechanically stirred and emptied of effluent and sludge annually by vacuum tanker. The tanker spreads the effluent and sludge onto land used for cereal cropping and cattle grazing. The spent litter solids are removed from the weaner sheds at the end of each batch, stockpiled and spread on cropping land each year. The total area of land on both sites is approximately 650 hectares.



On-Farm Baseline Emissions

The current baseline emissions for this piggery total **3,323 tonnes CO₂-e/yr** with an emissions intensity of **3.69 kg CO₂-e/kg HSCW**.

On-Farm Emissions Reduction Scenario

The reduction scenario modelled was to reduce feed wastage in the porkers and baconers (10% to 5%) and in the gilts (15% to 10%). No other options were considered feasible by the owners.

This scenario (see table below) reduced on-farm emissions **from 3,323 t/yr to 2,881 t/yr** and reduced kg CO₂-e/kg HSCW **from 3.69 to 3.20 (13% reduction)**.



The National PigGas Extension Project is funded by Ian Kruger Consulting, the Australian Government and Australian Pork Limited.

Ian Kruger Consulting

PigGas Report 46 – 524 sow, farrow to finish, conventional and deep litter piggery, SA. December 2014

Annual Greenhouse Gas Emissions Profile (calculated using PigGas)

Emissions	Current Emissions Baseline	Reduction Scenario (kg CO ₂ -e/yr)
Pre-farm		
Grain	796,865	774,277
Milling & delivery	0	0
Pig freight	0	0
Straw & bedding	4,500	4,500
Total Pre-farm	801,365	778,777
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	25,443	25,443
Fuel - stationary	41,338	41,338
Fuel - transport	36,374	36,374
<i>Enteric CH₄</i>	114,163	114,163
<i>Manure management</i>		
MMS CH ₄	2,672,540	2,243,613
MMS – direct N ₂ O	131,488	130,355
MMS – Atmos. deposition N ₂ O	113,913	109,378
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	162,732	155,941
Soil – leaching & runoff N ₂ O	25,325	24,268
<i>Offsets</i>	0	0
Total On-farm	3,323,317	2,880,872
Post-farm		
Pig freight	0	0
Meat processing	359,851	359,851
Exported manure	0	0
Total Post-farm	359,851	359,851
Dressed weight sold - HSCW (kg/yr)	899,627	899,627
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	0.89	0.87
On-farm	3.69	3.20
Post-farm	0.40	0.40
Total	4.98	4.47



The National PigGas Extension Project is funded by Ian Kruger Consulting, the Australian Government and Australian Pork Limited.

Ian Kruger Consulting