

PigGas Report 14 – 530 sow, farrow to finish, conventional and deep litter piggery, Vic.

December 2013



Production details

This is a family owned 530 sow farrow to finish piggery. Lactating sows and finisher pigs are housed in two large climate-controlled flushed sheds. Dry sows, weaners and grower pigs are housed in ten deep litter sheds on cereal straw. Pigs are sold at an average of 93.5 kg live weight for fresh pork sales to a supermarket chain.



Feed consumption

All cereals used in preparation of feedstuffs used in the piggery are grown, milled and mixed on-site. Dairy ice-cream by-product totalling 1,200 t/yr is transported to the site and mixed with cereal based diets in a computerised liquid feeding system and fed to all sows and finisher pigs. Dry cereal diets are fed to the weaner and grower pigs. Total feed consumed is 2,463 t/yr.

Sales/Tranfers

This is a closed herd with no pigs transported onto the site. A total of 9,629 pigs/yr are sold with a total dressed weight of 707 t/yr. External contractors transport the pigs to the abattoir.

Waste management systems

Manure from the lactating sow and finisher sheds is flushed to a holding sump. Solids are then removed from the effluent with a screw press separator. All cereal straw used in the deep litter sheds is grown on-site.



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

Ian Kruger Consulting

PigGas Report 14 – 530 sow, farrow to finish, conventional and deep litter piggery, Vic.

December 2013

Manure reuse systems

Effluent from the holding sump is pumped out daily and spray-irrigated to grazed pasture areas comprising lucerne, clovers and rye grass. These areas are then rotated with cereal crops. Solids from the screw press separator are spread on cereal cropping paddocks. Spent deep litter solids from the dry sow, weaner and grower sheds are stockpiled and spread annually onto wheat, barley oats and canola cropping paddocks. Total farm area available for reuse is 4,100 ha.



On-Farm Baseline Emissions

The current baseline emissions for this piggery total **903 tonnes CO₂-e/yr** with an emissions intensity of only **1.28 kg CO₂-e/kg HSCW**. These on-farm emissions are less than one-third of other similar sized piggeries because the daily effluent spreading avoids the usual large methane emissions which emanate from treatment ponds. In addition, the deep litter sheds produce substantially less overall emissions than treatment ponds.

On-Farm Emissions Reduction Scenario

There are few options to reduce the already very low on-farm greenhouse gas emissions produced. Overall, feed efficiency is excellent, leaving little room for improvement apart from reducing feed wastage to 5% in the farrowing, weaner and grower sheds. The owners plan to purchase new feeders for the weaner and grower sheds.

This scenario (see table below) reduced on-farm emissions **from 903 t/yr to 901 t/yr** and reduced kg CO₂-e/kg HSCW **from 1.28 to 1.27 (0.2% reduction)**.



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

Ian Kruger Consulting

PigGas Report 14 – 530 sow, farrow to finish, conventional and deep litter piggery, Vic. December 2013

Annual Greenhouse Gas Emissions Profile (calculated using PigGas)

Emissions	Current Emissions Baseline (kg CO ₂ -e/yr)	Reduction Scenario (kg CO ₂ -e/yr)
Pre-farm		
Grain	615,680	615,680
Milling & delivery		
Pig freight		
Straw & bedding	92,858	92,858
Total Pre-farm	708,538	708,538
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	297,544	297,544
Fuel - stationary	21,462	21,462
Fuel - transport		
<i>Enteric CH₄</i>	85,334	87,692
<i>Manure management</i>		
MMS CH ₄	29,097	24,998
MMS – direct N ₂ O	246,268	246,268
MMS – Atmos. deposition N ₂ O	60,028	60,028
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	126,608	126,608
Soil – leaching & runoff N ₂ O	36,463	36,463
<i>Offsets</i>		
Total On-farm	902,803	901,063
Post-farm		
Pig freight	73,650	73,650
Meat processing	282,719	282,719
Exported manure		
Total Post-farm	356,369	356,369
Dressed weight sold - HSCW (kg/yr)	706,789	706,798
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	1.00	1.00
On-farm	1.28	1.27
Post-farm	0.50	0.50
Total	2.78	2.77



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

Ian Kruger Consulting