

# Producer 3

**Producer 3 operates a deep litter and outdoor piggery in southern Australia. A product carbon footprint (kg CO<sub>2</sub>-e/kg liveweight) was determined for pigs produced on the farm in 2020 and 2022 as part of the industry life cycle assessment (LCA) project. In 2022, the farm produced pigs with a product carbon footprint 17% lower than the national average.**

## Process:

Integrity Ag met with Producer 3 to discuss their past product carbon footprint results and opportunities to further reduce this. One challenge discussed was that, unlike piggeries with uncovered effluent ponds, there is no emissions reduction opportunity available to deep litter or outdoor producers that can yield an equivalent reduction in farm-level greenhouse gas (GHG) emissions to covered anaerobic ponds. Essentially, the producer is already starting with a relatively low carbon footprint, limiting opportunities to substantially reduce emissions.

The following were raised as key considerations when evaluating whether a particular strategy is viable for a deep litter or outdoor piggery:

1. Site suitability
2. Pig performance
3. Animal welfare
4. Biosecurity
5. Capital and operating costs
6. Labour requirements
7. Regulatory considerations

## Potential strategies discussed:

- Reducing crude protein (nitrogen) levels in feed to reduce nitrogen excretion and hence, nitrous oxide emissions:
    - The producer indicated that they were interested in pursuing this, however, it would be challenging to implement as feed is milled by a third party. In addition, it is likely that only small reductions in crude protein could be made before potentially compromising pig performance.
  - Renewable energy:
    - Deep litter and particularly outdoor systems generally have low fossil energy demand. The producer already runs solar to power electric fencing. Potential strategies to investigate further include the use of electric run-around vehicles or using renewable diesel if or when this is widely available.
  - Low carbon grain:
    - As neighbouring farmers apply spent litter from the piggery to their cropland, the producer is interested to understand how this (i.e. potential avoidance of some synthetic fertiliser) could reduce the carbon footprint of the feed grains.
- The ultimate strategy would be to set up a circular system whereby feed grains from these farms make it back into the feed supplied to the pigs. Ability to do this is hampered by grain procurement being done by a third party (i.e. not milling on-farm and buying locally) and lack of readily available tools to estimate the carbon footprint of the grain produced.
- More generally, the producer also highlighted that (where the spent litter is sold), it is typically sold at a very low price, meaning that the end-users are either not aware of the nutrient value of the material or else are unwilling to pay a higher price, knowing that the producer needs to remove the spent litter from the farm.
- Carbon storage on-farm:
    - Opportunities to store carbon on-farm were discussed. Tree planting (at least in large areas) was discounted as the producer did not want to lock up land that might otherwise be used for a productive use or potentially be sold in future. Given the type of system operated, there may be substantial carbon stored in the soil already. The producer conducts regular soil testing, so it may be possible to estimate this.

## Next steps:

The agreed next steps following the discussion were:

- To determine an updated product carbon footprint for pigs produced on the farm.
  - This was particularly relevant as the discussion around opportunities highlighted that further reductions were likely to be incremental (e.g. small gains over time) so regularly comparing results over time (e.g. ~ every two years) would be key to tracking changes in GHG emissions.
- To continue to investigate on-farm emissions reduction opportunities and proactively engage with supply chain partners around adoption.

Additionally, the producer's lender has taken an interest in the carbon footprint results for the farm, so there may be opportunities in future to discuss sustainability-linked loans, particularly given the lender's emissions reduction targets for its financed emissions.



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