



The economic benefit of feral pig control in Chickpeas

What are the economic benefits?

The benefit of feral animal control is avoiding the damage that would have otherwise occurred had the control methods not been put in place.

Minimising yield damage at an enterprise level is the primary reason for feral pig control,

flow-on to other enterprises and subsequent seasons.

Additionally, control of feral pigs can avoid damage to the environment and infrastructure such as fences and dams.

How much damage occurs in chickpea crops ?

Ag Econ conducted a survey of land managers in 2020 covering 422,000 ha across NW NSW. Survey respondents reported that chickpeas sustained some of the highest damage from feral pigs compared to other crops.

Survey results were consistent with the literature which states feral pigs selectively consume food sources such as pulses.

Figure 1: Survey results showing estimated yield loss caused by feral pigs

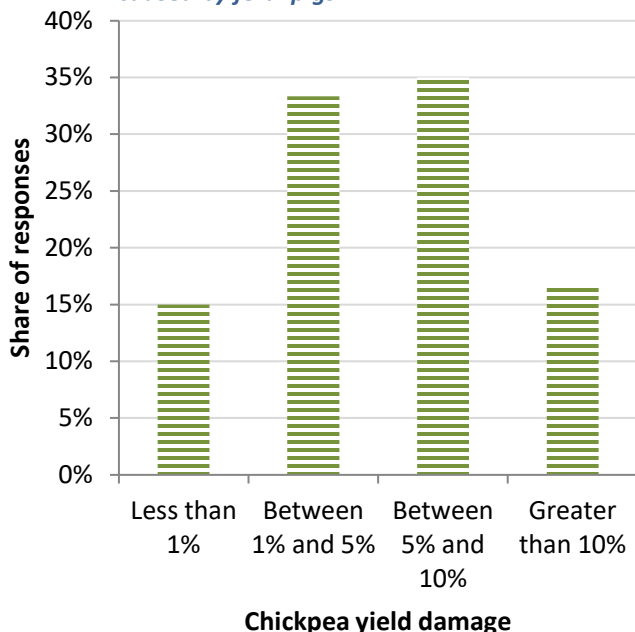


Figure 1 shows the survey results which indicate that 52% of respondents estimated yield losses from feral pigs to be over 5%.

Estimated yield losses are converted to economic losses by multiplying tonnes by the commodity price. This can simply be the anticipated average commodity price for the season.

This study considered ranges of historic regional yields and commodity prices with variance also applied for yield damage experienced by feral pigs.

Economic losses were influenced largely by the extent of yield damage caused by the pigs, then the anticipated crop yield and lastly the commodity price.

Damage caused by feral pigs in chickpea crops is estimated to be on average \$63 / ha when pigs are present.

Net economic benefit

The net economic benefit is the avoided losses (estimated economic crop loss) multiplied by the effectiveness of control, minus the control costs. 1000 simulations of the model using different data combinations (pig damage, crop yield, commodity prices and control effectiveness) showed that there was an immediate economic net benefit of up to \$96 /ha (Figure 2) for feral pig control in chickpeas. The length of the lines in the graph indicates the range of potential benefits. The difference in results between control methods largely came down to efficacy.

Baiting using 1080 poisoning is a low cost, highly effective control. Results indicated an average net benefit of aprox \$35 / ha.

Aerial shooting, also a highly effective method at a moderate cost, resulted in an average net benefit of \$36 / ha.

Ground shooting is the least effective method with high associated labour costs. On average the net benefit was negative \$7 / ha indicating the avoided yield loss did not exceed the control cost.

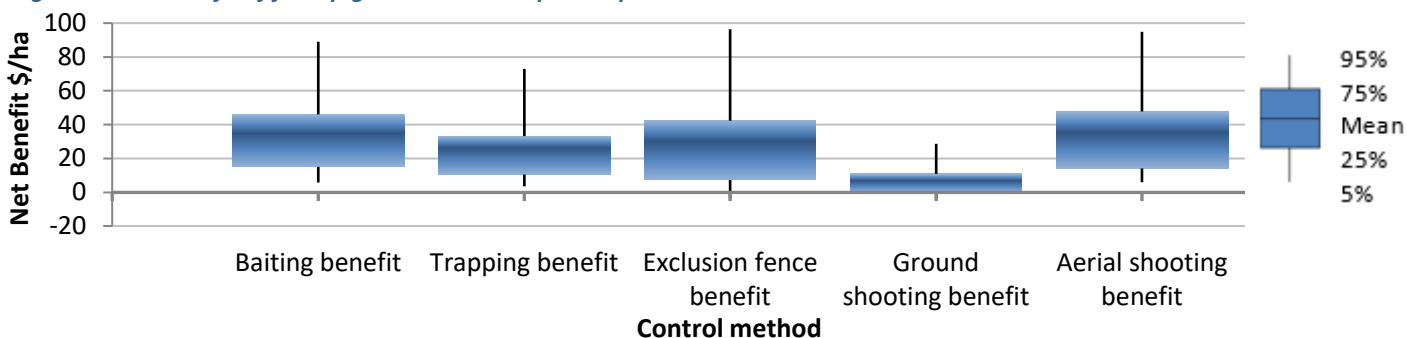
Trapping was the third most cost effective control method and resulted in average net benefit of \$27 / ha.

Exclusion fencing is a non-lethal, highly effective, long-term, control method. Figure 2 indicates net benefits for a single season. For cropping, strong consideration needs to be given to the rotations and fallow periods. The high upfront costs mean this method is generally not suited to extensive dryland cropping areas. It is best used for smaller areas experiencing sustained high pig pressure or highly productive areas such as lambing paddocks.

The modelling did not consider that feral pig populations have the capacity to recover quickly from control methods and other setbacks such as droughts. By keeping the population suppressed with regular area wide control programs, further losses are being avoided in other enterprises and subsequent seasons. Area wide management may reduce the cost of control options resulting in higher benefits.

The modelling suggests that where there are feral pigs present near chickpeas there will almost always be a net benefit with any control option.

Figure 2: Net benefit of feral pig control in chickpea crops



Further information:

- Findings summarised from the NW LLS funded study *Cost benefit analysis of feral pig control in North West NSW*. To read the full report visit www.lls.nsw.gov.au or www.agecon.com.au
- Contact your local LLS representative for information on current area wide management strategies ph. 1300 795 299

