



The economic benefit of feral pig control in **Cotton**

What are the 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, however

the benefits of thorough control can flow-on to other enterprises and subsequent seasons.

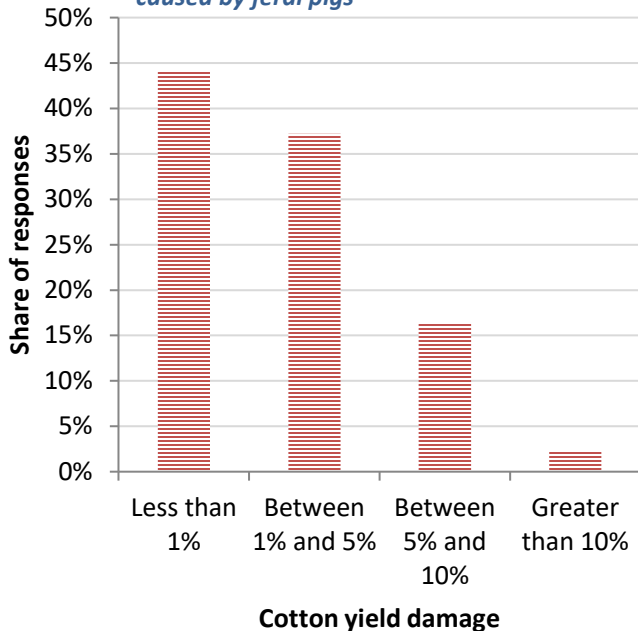
Additionally, control of feral pigs can avoid damage to the environment and infrastructure such as fences and dams.

How much damage occurs in cotton crops ?

Ag Econ conducted a survey of land managers in 2020 that covered 422,000 ha across NW NSW. Survey respondents reported cotton to suffer low damage from feral pigs. Figure 1 shows the survey results which indicate that almost half of respondents estimated yield losses from feral pigs to be under 1% of yield.

Cotton was reported to be damaged by feral pigs from rooting planted seeds and the plant, feeding on bolls and trampling the crop when using it as a habitat.

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



The study modelled yield losses of up to 2% in cotton. Estimated yield losses were converted to economic losses by multiplying the yield loss by the cotton price. While the study used historic price data, this could simply be the anticipated average bale price for the season.

The analysis modelled historic regional yields, cotton prices and yield damage experienced by feral pigs. The results estimated economic losses caused by feral pig damage to be up to \$110 / ha in irrigated cotton and \$28 / ha in dryland cotton.

The economic losses in cotton were most sensitive to the yield damage attributed to feral pigs.

Damage caused by feral pigs in cotton crops is estimated to be on average \$47 / ha (irrigated crop) and \$10 / ha (dryland crop).

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 \$70 /ha (Figure 2) for feral pig control in cotton. 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 approx \$26 / ha (irrigated crops).

Aerial shooting, also a highly effective method at a moderate cost, resulted in an average net benefit of \$26 / ha.

Ground shooting is the least effective method with high associated labour costs. On average the net benefit was \$4 / ha, a third of the time the avoided yield loss did not exceed the control cost.

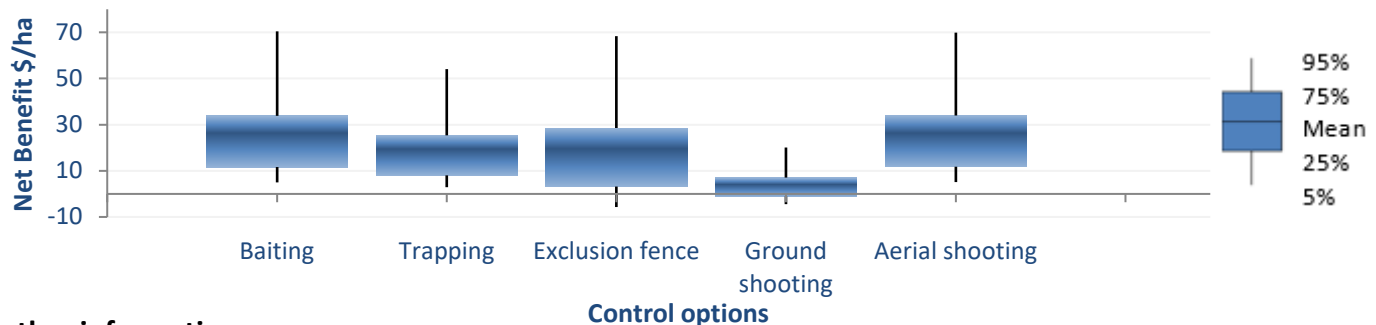
Trapping was the third most cost effective control method and resulted in average net benefit of \$20 / ha.

Exclusion fencing is a non-lethal, highly effective control method. The high upfront costs mean this method not suited to broadacre cropping where areas may be fallow for a number of seasons. Exclusion fencing is best used for smaller areas experiencing sustained high pig pressure or highly productive areas such as lambing paddocks. It should be noted that exclusion fencing shifts the feral pig population rather than reduce it.

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

Regular area wide management utilising a combination of control methods is recommended for effective long-term population control.

Figure 2: Net benefit of feral pig control in irrigated cotton 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

