



Business Case

Decreases crop loss from 30%-60% to 1%

Location:	Leongatha, Victoria, Australia	
Application context:	Pea and bean farm (<i>Agriculture</i>)	
Problem definition:	Birds destroying crops	
Bird species:	Crows (<i>Corvidae</i>)	
Bird behavior:	Foraging	
Time of the year with bird problems:	July - March	
Time of the day with bird problems:	From dusk till dawn	
Number of systems:	1 x AVIX Autonomic Mark II	
In use since:	October 2019	
Laser projection area:	40 hectares (<i>99 acres</i>)	
Bird reduction after the laser deployment:	96%	
	Before laser deployment	After laser deployment
Average yearly production per ha:	1,500 kg	3,300 kg
Number of birds:	400	16
Crop loss due to birds:	30%-60%	1.2%
Yearly production of the farm:	60,000 kg	132,000 kg
Saved production as result of the laser deployment:		72,000 kg



Pulse farm decreases crow damage by 96% and increases revenue by 22% with lasers

Australian pulse industry

Pulses are grains that are grown for human consumption; this includes beans, peas, lentils, chickpeas, and lupin. They contain a high protein and nutritional value and are a vital component of most people's diets around the world¹.

Australia produces an estimated 2.2 million tonnes of pulses, which are grown over more than 1.8 million hectares in the southern and northern regions. A large proportion of the Australia pulse crop is exported to international markets. Total exports are equal to 1.99 billion Australian dollars.

Table 1: Average pulse production in Australia

Pulse	Production (t)
Chickpeas	1,012,000
Lupins	714,000
Lentils	380,000
Faba beans	362,000
Field peas	313,000
Total	2,781,000

Five-year average up to 2017-18 (financial years) Source: ABARES

As a result of the high value these crops hold, Australian farmers are supported by pulse agronomists, to ensure that they can produce pulses that are of the highest quality. This is accomplished by using the most advanced technology to prevent any challenges that may reduce the quality.

One of the issues the industry faces is bird damage to crops. Australian farmers and pulse agronomists are challenged to find a cost-effective and sustainable bird control solution.

Many traditional bird control methods like gas cannons, bird netting, and sound devices are not long-term effective and don't bring the desired results.

Crow damage to pulses

Bordonaro Produce is a pea and bean farm owned by Paul and Sam Bordonaro located in Victoria, Australia. Just like many other farmers, Paul had to deal with crow damage to his crops.

The farm had a yearly loss of 30-60% from hundreds of crows eating the pea pods and the peas themselves. Crows can destroy peas in a matter of hours, and they are always around from dusk till dawn.

Paul Bordonaro explained, "We couldn't monitor the crows 24/7, we would have to employ someone to sit in the field and scare them off, and that's just not feasible". They invested in many gas guns that are set to go off every 15 minutes. Eventually, the crows began to get used to these sounds and would return to the pea crops faster each time.



¹ https://www.aegic.org.au/wp-content/uploads/2018/02/AEGIC-Grain-Note-pulses_LR.pdf

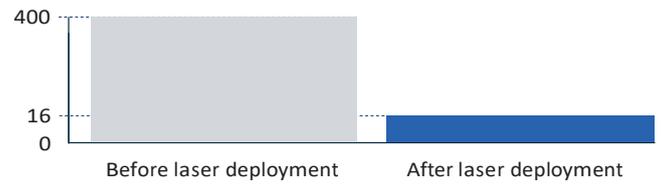
Cost-efficient solution to reduce crow damage

In January and February, many farms take a huge loss of their pulses due to birds. This results in a higher demand for pulses as there is a limited supply. To solve this issue, Paul went on a lookout for a proper bird control solution. He found out that unlike the traditional bird control methods, laser bird repellents from [Bird Control Group](#) are very effective in scaring birds away.

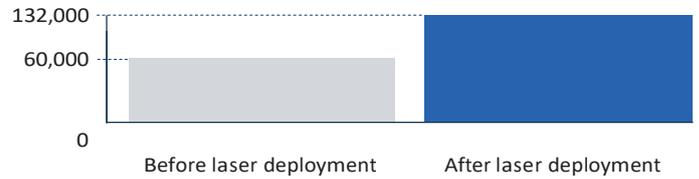
A local representative visited Bordonaro Produce and provided a demonstration of the [AVIX Autonomic Mark II](#). AVIX Autonomic Mark II is a fully automated laser bird deterrent device, which effectively and harmlessly keeps birds away 24/7. The green laser beam poses a physical threat to the crows, as the green laser beam moves towards them, they disperse from the area within seconds. The laser can be put up before the harvest season to prevent bird damage. Paul saw the immediate results of the laser bird deterrent system during the demonstrations and was convinced to get one at his farm.

After a few months of the laser deployment, Bordonaro Produce managed to decrease its bird number by 96%, saved 72,000 kg of peas and beans and increased revenue by 22%.

Number of birds at the farm



Yearly production of the farm (kg)



“There was direct evidence that the green laser beam did pose a threat to the birds as it moved across our field. It is a great instrument for our farm and had definitely paid for itself. We would be pretty happy to get another one.”

Paul Bordonaro, Owner of Bordonaro Produce, Victoria, Australia