

Robotic Laser Beams tested for Bird Control

A three-year trial for bird control was conducted at Coral Beach Farms testing the robotic laser beam, the Agrilaser Autonomic and comparing it to other methods. The Agrilaser Autonomic is relatively new technology that was developed in The Netherlands. The Autonomic has been successfully used at airports as well as European orchards with the following benefits:

- It is configured through the remote control with a maximum range of 2000 meters in a circle of 350° (repelling birds from an area of 12 km²).
- It is user friendly. A one-time quick set up from a laptop is all that is needed.
- It is clean and silent.
- It is safe for humans and birds. Livestock such as cows, pigs and chickens will ignore the laser beam.
- Its laser is viewed as a physical danger to birds and they will fly away.
- It can operate as either an AC unit or solar powered unit.

In year one of the trial (2015), results were very positive. We configured the green laser beam to sweep just above the trees, following the topography of the entire orchard and only operate during specific times of the day. In less than a minute the laser covered 135 acres which technically should scare birds from entering the orchard. Results reflected this theory. We noticed an obvious change in bird population after installation of the lasers. The crows did not like the laser beam as they couldn't figure it out. They could see it but they could not hear it. They would sit perched *outside* the perimeter of the orchard and observe the physical object moving through the trees. If they did get into the orchard they would stay on the orchard floor and then struggle to get out.



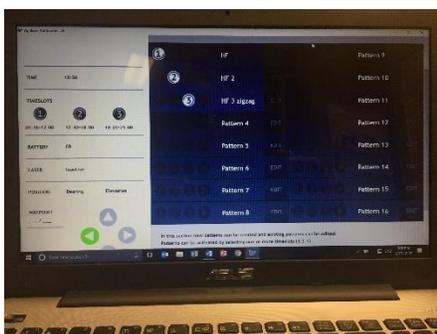
In 2015, we compared the Agrilaser to Falconry. We found Falconry to be successful at keeping birds out of the orchard; however, the effect only lasted when the falcons and hawks were flying over the orchard and it is also a very costly method.

In year two of the trial, we experienced a very high bird pressure year and the success of the laser was not as good as year one. It was observed that the smaller birds, such as the starlings and sparrows, seemed to be much scarcer in orchards with lasers and more abundant in orchards without lasers. However, we had a different experience with the crows and the magpies. These pests had a dominate presence in many of CBF orchards, with or without the lasers. It appeared they got used to the lasers and then ignored it. We then started walking the perimeters of orchards with pellet guns in blocks where we had high bird pressure. The combination of the two methods appeared to be effective.

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Even though we were not pleased with the results from the laser in year two, we had some ideas on how we could improve the trial in year three. The Agrilaser has capabilities of saving 16 different patterns and has 3 different timeslots. This means you can have a specific pattern at dawn, change the pattern mid-day, and have a third pattern in the evening before the sun goes down. Birds usually feed early in the morning around sunrise and late in the afternoon around sunset, so this is when it is extremely important to have the lasers running while changing the pattern for each time.

Learning what we did in the second year of the trial, for the third year, we changed the laser beam pattern more frequently to try and continually deter the birds. 2017 happened to be a lower bird pressure year than 2016; however, there still was substantial bird pressure. We had three patterns running at different times of the day for two weeks, then we changed to three new patterns for the following two weeks. By changing the pattern more frequently, we achieved better results with the laser. The need for walking the perimeter with a pellet gun was much less in 2017 than in 2016.

At Coral Beach Farms, we use either the Autonomic Laser or Bird Gard, which is an electronic control device that broadcasts distress call recordings which triggers a fear in pest birds causing them to vacate the orchard. A good comparison of these two products took place in the Coldstream area. At our Buchanan Road property, we used one Agrilaser unit and at the Warren Road property we used 4 Bird Gard devices. These two farms are located 3 km apart and have similar bird pressure. The Warren Road property had up to 20% damage in a few areas and the Buchanan Road property had up to 5% damage in certain areas (using the laser control method stated in the previous paragraph). With Bird Gard, it is important to have the correct sound card devices to ensure you scare away the bird species you have in your orchard. In order to do this successfully, you need to know which birds you have in your orchard. This can vary year to year, so you may have to invest in several sound cards for the electronic device to be effective. We also discovered that birds tend to become habituated to the sounds produced.

When dealing with bird control, there is no silver bullet. It is important to have an integrated approach to bird control by using 2 or 3 methods, not just one. At Coral Beach Farms, the Agrilaser has proved to be one of our more successful means of bird control. We will continue to use the Agrilaser, the Bird Gard units, and walking the perimeters of the orchard with a pellet gun to ensure a clean crop. Also important is to be sure to start bird control early before the birds have tasted those sweet, delicious cherries. Once they have tasted those cherries, it becomes more difficult to break their habits; plus, other birds may follow them to this smorgasbord of cherries which only compounds the problem.

In closing, Coral Beach Farms would like to extend a big thank you to the Investment Agriculture Foundation of BC and the Growing Forward 2 Program for their assistance in this trial. Without these programs, it makes it difficult to try new methods and experiment with new technology.

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