

Preliminary Raven Deterrent On-Farm Trials

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To gain a better understanding of raven predation, a three-part project was conducted throughout the summer of 2019. This article will focus on part two of the project which involved trialing non-lethal raven deterrents on sheep farms to collect data on the effectiveness of the deterrent.

Non-lethal raven deterrents were piloted on nine Ontario sheep farms in 2019. Deterrents had variable results on-farm due to compounding factors such as different farm types, and histories of raven predation. The results of this study are preliminary. Below are short summaries for three of the deterrents used in the study.

Only data from farms which experienced active kills in 2019 were summarized in this article due to space restrictions, which can be found in Table 1 and Table 2. The number of lambs attacked and the number of days in the study is summarized before and after the deterrent was in use. Additionally, the number of days the deterrent was effective is included.

Plastic Decoy Ravens

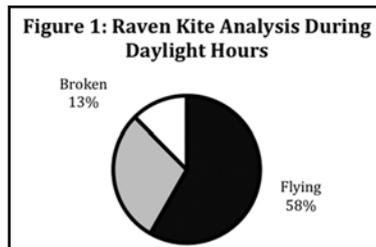
Two different farms experiencing active raven predation trialed plastic decoy raven deterrents. The decoy ravens were hung upside down in the pasture with the sheep. On the first farm, after the decoy was set up there was no raven predation from the time of set up to the end of the study



period (36 days). The deterrent seemed to alter the ravens' flight patterns and the ravens no longer came into the sheep paddock. The second farm set up the decoy and experienced four kills within eight days. The first kill happened on day four. The results are mixed due to different farm histories.

Raven Kite

A raven kite was utilized on one farm. This farm was not experiencing active kills however there were multiple ravens around the barn and pastures. The kite was attached to a 20-foot pole and when the wind picked up, the kite flew around the pole mimicking a large bird in flight. If there was no wind the 'bird' remained stationary and therefore did not deter ravens. The deterrent was set up on a hill close to the sheep and the farmer still observed ravens every day. The amount of time the kite was in flight, stationary and broken can be seen in Figure 1.



Scare Eye Balloons

Scare eye balloons were trialed on four farms with mixed results. Two farms were experiencing active raven kills and two farms were not but had kills in the past. The farm experiencing kills set up the balloons and had no kills for 15 days, then experienced another kill. The other farm which was actively experiencing raven predation was a confinement operation. Since there were four large barns, different deterrents were trialed in each of the barns. After the deterrents



TABLE 1: FARMS UTILIZING DECOY RAVENS

Farm ID	Deterrent Utilized	Before Deterrent Use		During Deterrent Use		
		# Lambs Attacked	# of Days (first kill to study start date)	# Lambs Attacked	# of Days Deterrent Set Up	# of Days Deterrent Effective
F	Plastic Crow Decoy	4 lambs killed	49 (May 22 - Jul 9, 2019)	0	36 (Jul 10 - Aug 14, 2019)	36 days
I	Visual Scare Feather Crow	9 lambs killed	12 (May 19 - May 30, 2019)	3 lambs killed + 1 ewe injured	56 (May 31 - Jul 25, 2019)	4 days

Table 2: Farms Utilizing Scare Eye Balloons

Farm ID	Deterrent Utilized	Unprotected (No Trial Deterrent)		Protected (Using Trial Deterrent)		
		# Lambs Attacked	# of Days (first kill to study start date)	# Lambs Attacked	# of Days Deterrent Set Up	# of Days Deterrent Effective
B	Scare Eye Balloons	4 lambs killed	30 days (May 22 - Jun 20, 2019)	1 lamb killed	30 (Jun 21 - Jul 20, 2019)	15 days
H	Scare Eye Balloons	4 lambs killed	26 (Jun 1 - Jun 26, 2019)	0	91 (Jun 27 - Sept 25, 2019)	91 days

were set up, the ravens were not observed in the barns and there were no kills for the duration of the study period. Ravens were observed in the fields around the farm.

Conclusion & Next Steps:

There was a decrease in rate of kills per day after adding a deterrent at each of the four farms, however, the change in rate of kills per day was not significant based on a pooled t-test assuming equal variances with a p-value equal to 0.1537 (a p-value of 0.05 or lower is considered significant). This is

in part due to a small sample size and unequal timings of deterrent use.

In summary, it is recommended that non-lethal deterrents be utilized only when experiencing active raven predation. Since ravens are intelligent, deterrents should only be used for a short time period to ensure the ravens do not become accustomed to them. Similar to coyotes, novelties tend to work for a short time and then become ineffective once the coyotes become familiar to the deterrents. For example, if a farm is experiencing active raven predation during pasture lambing, deterrents should be set up directly prior to lambing and removed after lambing season is complete.

lambing season is complete.

Other best management practices noted from the study included picking up afterbirths, disposing of deadstock in a timely manner and eliminating easy roosting spots around the pastures or barn such as dead trees and unused silo platforms.

If you are experiencing raven predation and wish to be involved in the upcoming 2020 study, please email jillian.craig@ontario.ca or call 705-341-1246. **OSN**

Thank you to all farms who participated in the on-farm non-lethal deterrent trials and to those who took the time to fill out the raven predation survey. Your participation is greatly appreciated.

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