



Round Silage Bales

Reducing Bird Damage

Silage film full of holes, mouldy fodder and angry farmers: bird damage to round silage bales is a huge problem for many grassland farmers. Transparent stretch film can be used to bring about a significant reduction in the problem.

By Sebastian WIESER, Florian TRUMMER and Reinhard RESCH

Many silage bale producers face having the stretch film of their round bales riddled with holes by birds or other animals. Such damage can become a huge qualitative problem, as exposure to air has a negative impact on the anaerobic fermentation process and silage stability. Once the multiple stretch film layers have been damaged, the only way to seal the holes hermetically is to use special adhesive tape. That is why it is particularly important to protect the wrapped silage bales.

Stretch films are available in many colours. Farmers frequently choose the film colour for aesthetic reasons, to enable, say, the bales to blend in better with the surrounding landscape, or they use the colour to support a charity event.

Exact observations needed

Animal activity is governed by many environmental factors. In order to be able to draw reliable conclusions about the protective effect of a stretch film, it is absolutely essential to carry out multiple exact

observations under different conditions. Two sites in Austria, at which seven field trials in total were carried out with systematic observations for several grassland growths, were selected for the experiment. The trial sites were in Puch near Paldau in Southeast Styria and in Pichl near Roßleithen in Upper Austria. In order not to overchallenge the birds and animals, on the one hand, and to ensure exact observation and evaluation, on the other hand, only two stretch film colours were tested: the green standard film most frequently used in Austria and the transparent “Agristretch Crystal” stretch film. Both films had a strength of 25 μm (micrometres) and were wrapped with 70% pre-stretching.

Once the round silage bales had been wrapped, the animals were observed at a safe distance for two hours at a time in the morning, at midday and in the evening, with the activity close to or on the bales being logged exactly. At the end of the observation period - usually after two days -, the extent of the damage to the silage bales was determined.

This final inspection focused, in particular, on peck-holes, claw damage and bird droppings.

Crows outed as being responsible for damage to bales

The individual observation trials revealed that carrion crows, in particular, were active in the vicinity of the round bale group. The activity of the crows was heavily influenced by the site and the season. Other bird and animal species were of minor importance. The summary evaluation of the seven observation trials in Fig. 1 confirms that the activity of the crows varied considerably between individual trials. The control groups (bales with a green wrapping) differed widely from the round silage bales with transparent wrapping in terms of the extent of damage. As the activity of the crows increased, hole damage in the case of the green silage bales tended to rise significantly. By contrast, hole damage in the case of the "Crystal" variant remained constantly low when the activity of the crows increased. The most severe damage to the control groups was observable in the second trial on the site near Roßleithen. Scientists from Ireland have observed much more severe hole damage due to birds in practice.

On investigation of the extent of the damage, the example of the first-growth field trial on the Puch site near Paldau clearly shows the difference between the two stretch films and the position of the bale groups on the trial area (Fig. 2). In both bale groups, on average, a reduction in claw damage and peck-holes was observable. The bird droppings on the bales indicate that the crows had visited them. Extracted blades of grass provide evidence of carrion crow peck-holes, while other small holes were judged to be claw damage.



Carrion crows peck holes in the stretch film and like pulling out blades of grass.
Photos: Wieser

Transparent future?

Following initial extensive observations regarding silage film damage in Austria, it is safe to maintain that the bird or animal activity and influences that cause damage in relation to, and on, the round silage bales depend on a multitude of factors. The aim was to demonstrate that bird damage to silage bales can be reduced by using transparent stretch film. In future, transparent stretch film might be a good alternative to shooting crows and might also make various protective measures (scarecrows etc.) prior to transportation redundant.

As part of their Diplom matriculation project at the Raumberg-Gumpenstein Agricultural Research and Education Centre (AREC), Sebastian Wieser and Florian Trummer studied two stretch film colours in terms of their protective effect against birds in the period directly after bales are wrapped until they are transported away from the field.

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German

English

German	English
Abb. 1	Fig. 1
Zusammenhang zwischen Krähenaktivität und Lochschädigung in Abhängigkeit von zwei verschiedenen Stretchfolien	Correlation between crow activity and hole damage, depending on two different stretch films
Löcher in der Folie (Anzahl)	Holes in the film (number)
Daten: Praxisversuche Puch bei Paldau und Picht bei Roßleithen 2016	Data: field trials in Puch near Paldau and in Picht near Roßleithen 2016
Krähenaktivität (Anzahl)	Crow activity (quantity)
Kontrolle	Control

German	English
Abb. 2	Fig. 2
Schäden an den beobachteten Silorundballen zum Zeitpunkt der Endkontrolle	Damage to the monitored round silage bales at the time of final inspection
Anzahl zum Zeitpunkt Endkontrolle	Quantity at the time of final inspection
Kontrolle Gruppe 1	Control group 1
Crystal Gruppe 1	Crystal group 1
Daten aus Versuch Puch bei Paldau, 1. Aufwuchs 2016	Data from the trial in Puch near Paldau, 1 st growth in 2016
Krallenschäden	Claw damage
Picklöcher	Peck-holes
Vogelkot	Bird droppings