Insight for healthier business decisions

Intestinal Integrity (I^2) 2023 Mid-Year Review

Introduction

Elanco's Health Tracking System (HTSi) is an established, independently verified and globally recognised broiler benchmarking platform that incorporates multiple lesions to assess intestinal health, locomotor function, respiratory stability and bird welfare.[1]

Elanco's Health Tracking System (HTSi) is a data led broiler benchmarking platform that enables poultry businesses to monitor the performance of birds better, by understanding the flock health and so drive towards future improvements.

Elanco's bespoke Intestinal Integrity (I^2) index is a unique, weighted index that assesses the intestinal health of flocks captured in HTSi. I^2 is the primary driver of broiler performance, and there is a strong correlation between improved Intestinal Integrity and improved ADG, FCR, EPEF[1] and percent livability.[2]

ADG increases by **0.04g**

FCR decreases by **0.13pts**

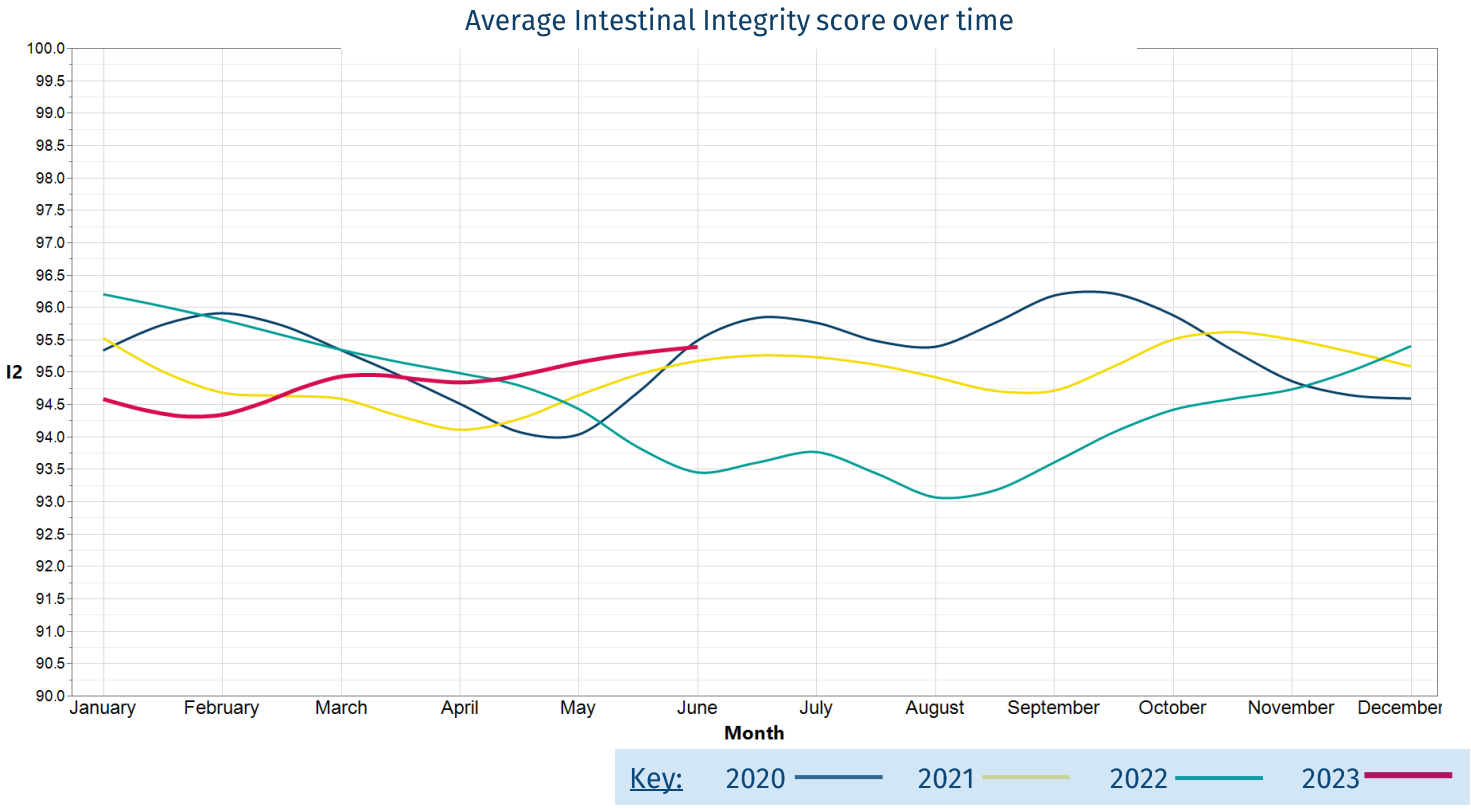
EPEF increases by **0.52**

% livability increases by **5%**

The mid-year review is an aggregation of all UK data collected by the Elanco team from the preceding six months. The data included is unselective and includes all birds post-mortem, irrespective of the source of anticoccidial or programme choice. Whilst the data is indicative of what is occurring across the industry, individual customer and regional variation does exist. Because of this, we recommend you contact the Elanco team should you wish to have a detailed discussion concerning your I^2 index.

UK Industry Intestinal Integrity (I^2)

Year on year average



The Intestinal Integrity index in 2023 has shown steady improvement, returning to similar levels that were recorded in 2020 and 2021. This increase over the past six months is contradictory to the previous year, where I^2 over the same time period showed a decline.

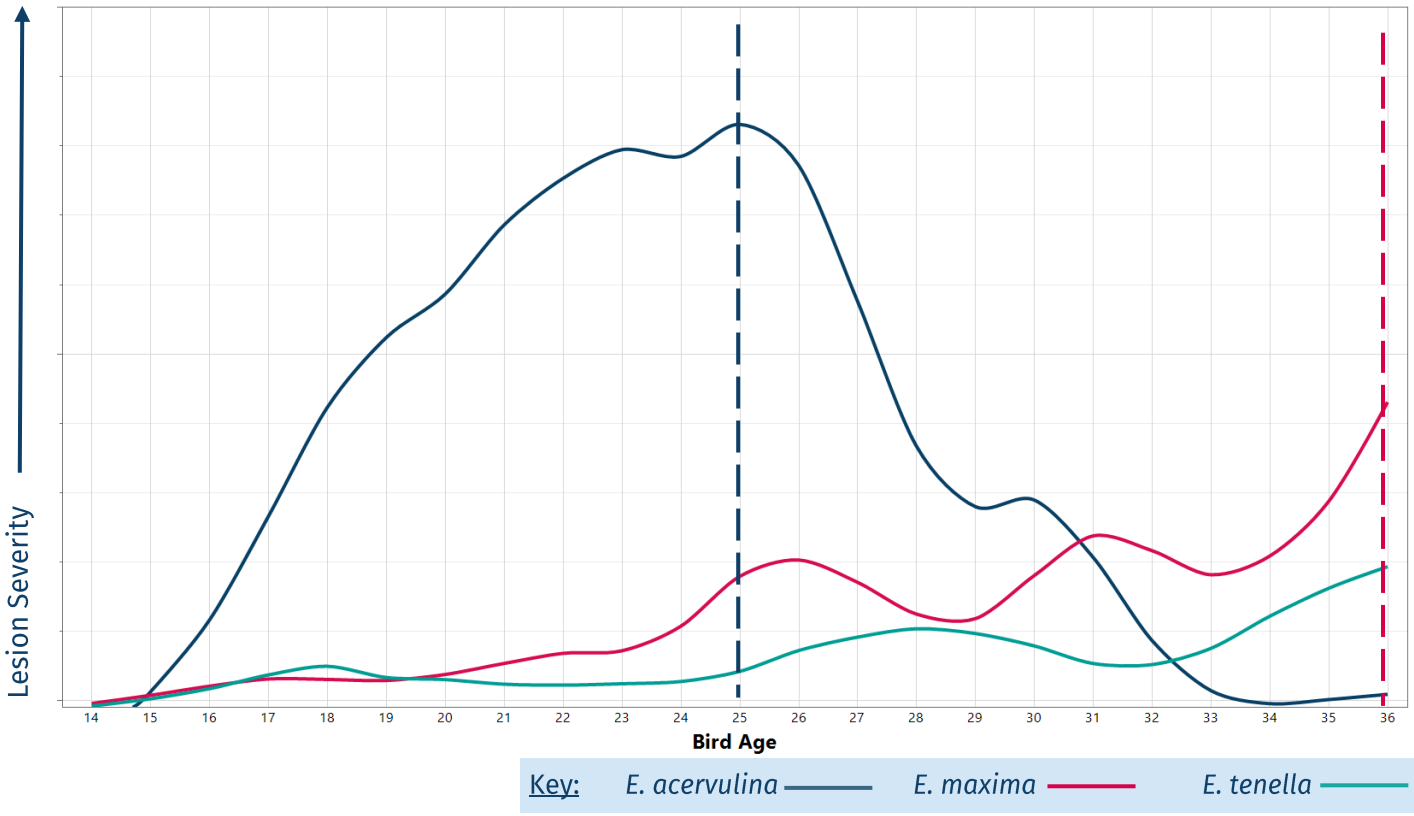
The I^2 average has been increasing since August 2022, where I^2 scores across the industry were the lowest that had been recorded in previous years. This is due to the improvement in *E. acervulina* control, as well as a small reduction in gizzard erosions noted in the period.

The UK industry suffered the worst Avian Influenza outbreak in history in the winter of 2022, continuing into the spring of 2023. The continued focus on biosecurity, as well as on farm management and stable coccidial control are all factors that can improve I^2.

UK Industry January – June 2023

Age of peak challenge by coccidia species

Eimeria challenge by three key species



E. acervulina

Looking at data from the past six months, *E. acervulina* lesions are currently peaking at 25 days of age. Levels remain elevated until 26 days, before a sharp decline. There is a smaller secondary peak at 30 days that has been noted this year; this may be down to an increase in slower growing breeds within the industry.

E. maxima

Incidences of *E. maxima* were seen from 24 days onwards, with elevated levels at 26, 31 and 36 days of age. All cases were confirmed with microscopy.

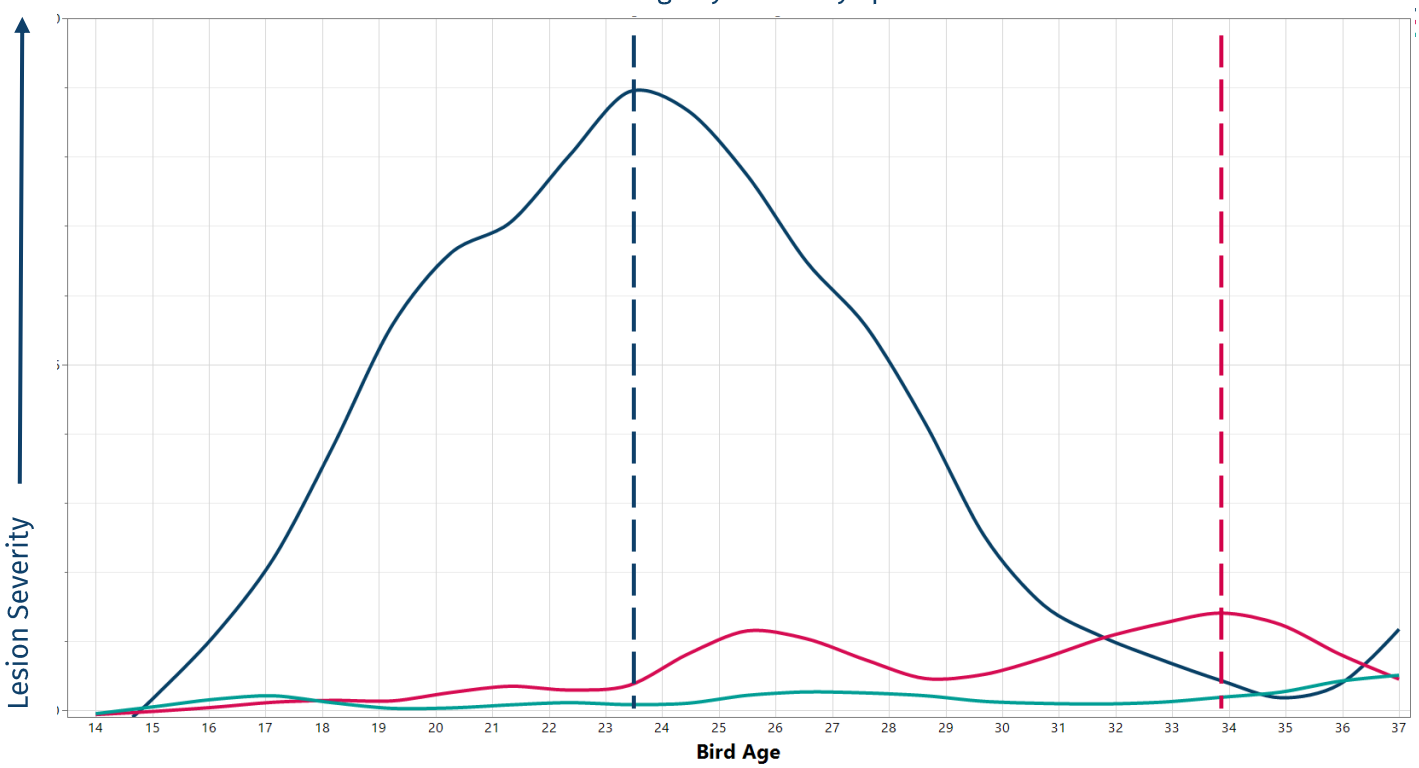
E. tenella

E. tenella was identified in the late twenties and early thirties. Of the cases seen, 95% were mild (score 1), with the remaining 5% moderate (score 2).

UK Industry January – June 2022

Age of peak challenge by coccidia species

Eimeria challenge by three key species



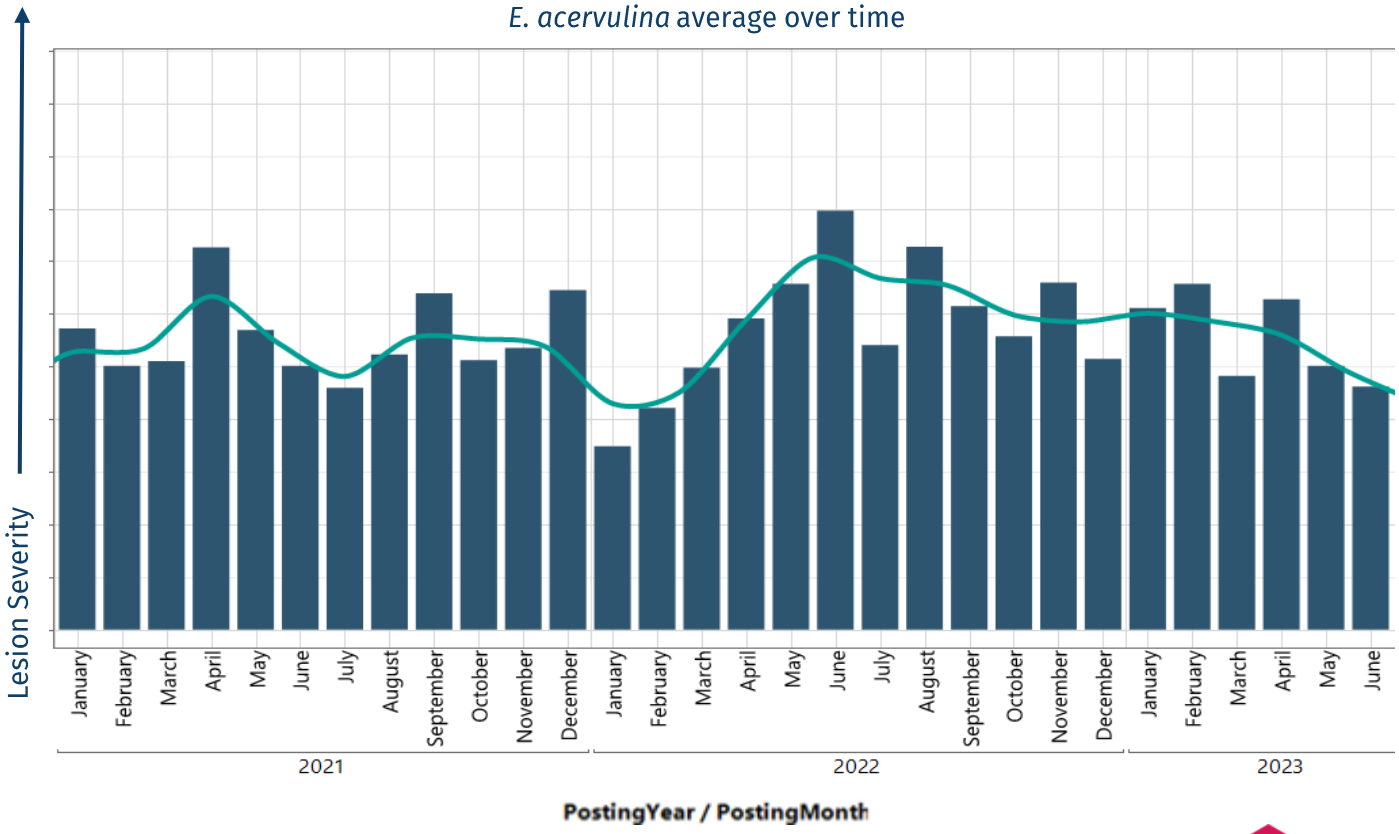
E. acervulina
Comparing to the same time period in 2022, the peak age of which *E. acervulina* lesions were seen was 23.5 days, 1.5 days earlier than what has been seen in 2023. This is followed by a decline, and no secondary peak was apparent.

E. maxima
Confirmed cases of *E. maxima* were noted at the same time in the bird's life; from 24 days onwards. Fewer cases were noted in this time period when compared to 2023.

E. tenella
Minimal *E. tenella* was identified in the first half of 2022, with just 37 mild (score 1) cases noted.

Topical Lesion: *E. acervulina*

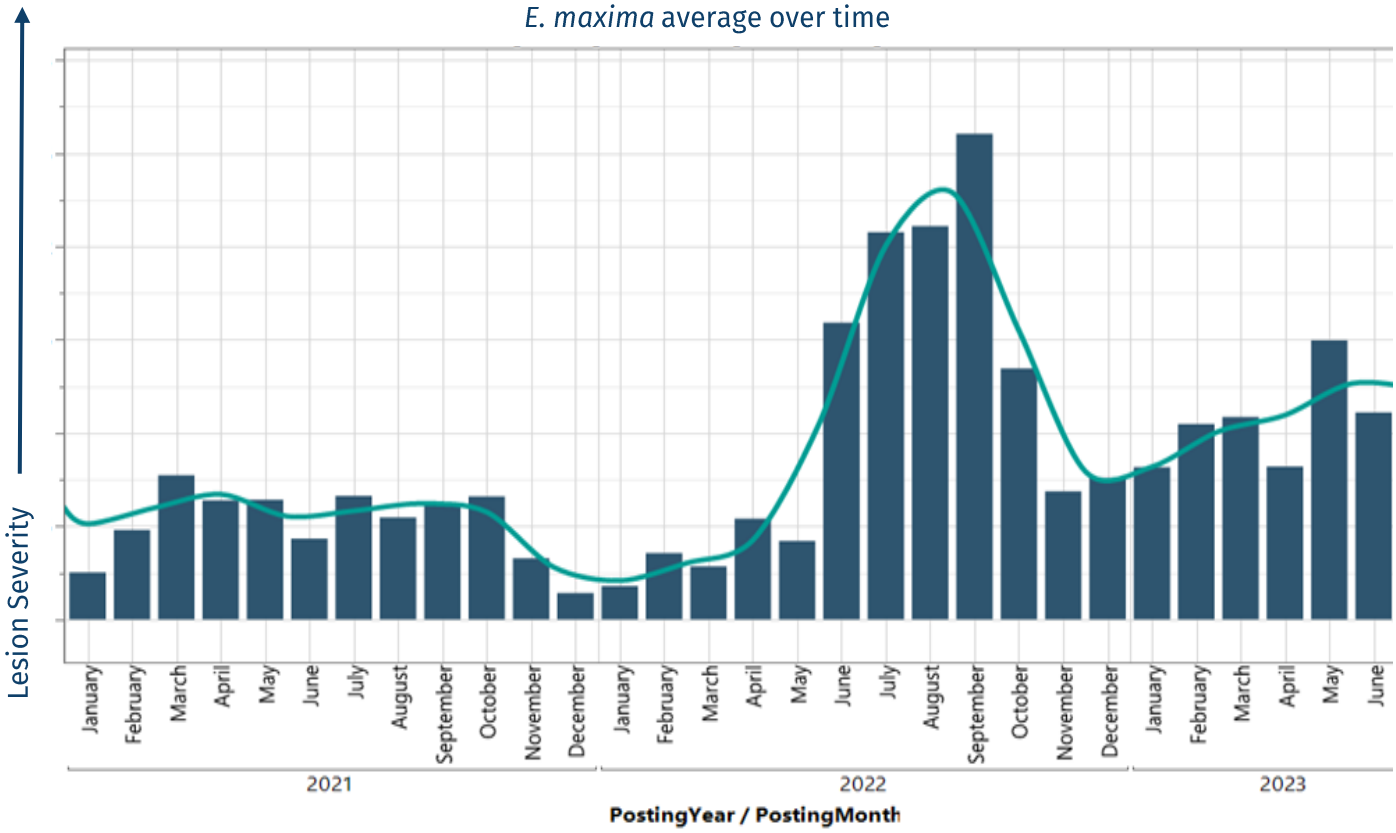
Average *E. acervulina* severity from January 2021 to July 2023



Since a peak in *E. acervulina* lesions seen in June 2022, levels have steadily decreased. The average in June 2023 is the lowest that has been documented in HTSi data since February 2022. This has contributed towards the improvement in I^2 that has been seen so far this year.

Topical Lesion: *E. maxima*

Average *E. maxima* severity from January 2021 to July 2023

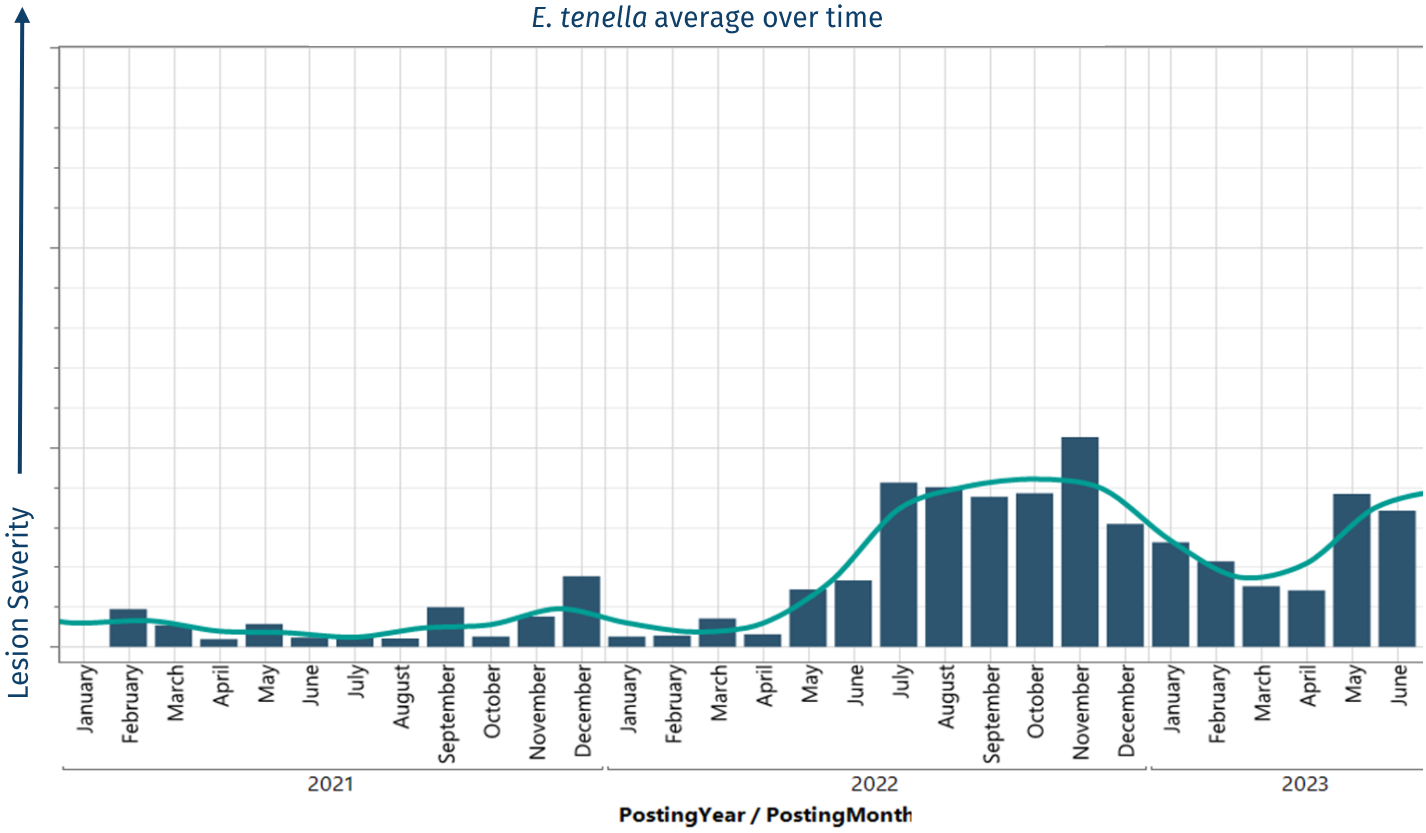


Data from the annual HTSi report for 2022 showed an increase in *E. maxima* over the summer months. Although the levels have reduced from September 2022, HTSi data from January to July 2023 has shown that incidences have slowly increased over the first half of the year. Levels of *E. maxima* have not yet returned to what was noted in 2021.

Data from the UK HTSi database including 13,985 birds.

Topical Lesion: *E. tenella*

Average *E. tenella* severity from January 2021 to July 2023



Similarly to *E. maxima*, levels of *E. tenella* were higher in 2022 than what had previously been recorded. Levels had reduced from November through to April 2023, yet May and June 2023 have shown an increase. This is predominantly made up of mild (score 1) lesions, with 5% of incidences moderate (score 2).

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Summary

Intestinal Integrity in 2023 has continued to increase, with levels in June 2023 being the lowest since February 2022. This may have been driven by the reduced levels of *E. acervulina* seen. Farms who capitalised on the dry weather early in the summer to dry out houses in between crops will have helped reduce the disease burden on farms.

The second half of the year can often present wet and warm weather; a struggle for controlling disease burdens in poultry houses. Despite a reduction in *E. acervulina* and *E. maxima* in the second half of 2022, *E. tenella* peaked in November 2022 and the latter two species have not yet reduced to levels seen early in 2022. This may show that once stability has been disrupted, it can take months for it to return. On farm management at turnaround time is critical in wet and warm weather to further reduce the environmental burden, particularly as we head towards winter months.

1. Kasab-Bachia H, Arrudab A, Robertsa T, Wilsona J. (2017). The use of large databases to inform the development of an intestinal scoring system for the poultry industry. Preventive Veterinary Medicine, 146, pp. 130–135
2. Calnek W, Barnes H, Beard, C et al. (1997). Enteric Disease Complex. Diseases of Poultry, 10°, pp. 721-738

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