Biostrong® starts your flock strong and maximises production.

Biostrong® Protect OFC

- Maintains feed intake particularly under conditions of enhanced challenge
- Supports poultry gut health and resilience to stress over periods of enhanced stress
- A highly reliable phytogenic solution for poultry species based on quality and science

Biostrong® 510 OFC

- Improves nutrient digestibility and retention independent of age
- Improves feed conversion ratio, enhances body weight, or improves rate of lay
- increases egg weight and egg mass, improves eggshell strength
- Significant reduction of ammonia and greenhouse gas emissions
- Improves bone strength
- Supports intestinal health

Biostrong® Protect OFC is designed to keep organically reared birds in optimal condition especially in phases where enhanced health challenges are foreseen. Based on natural phytogenic compounds, such as saponins and a specifically selected blend of essential oils, the components in Biostrong® Protect OFC work in synergy to maintain normal intestinal health and feed intake, thus supporting profitable production under challenge conditions. Biostrong® 510 is an EU EFSA Zootechnically registered phytogenic feed additive to improve poultry performance and feed efficiency in broilers, layers, turkeys, ducks, and other avian species. It is designed to deliver performance in poultry production by improving feed efficiency, increased weight gain and egg production.

Multiple farm trials have been run-in free-range layer (both conventional and organic) systems to demonstrate the benefits of treating birds with the Biostrong® portfolio of phytogenic additives. This short summary identifies the major benefits seen from treatments; full trial reports available on request:

Results:

	Free Range Conventional		**Free Range Organic Trial 1**		**Free Range Organic Trial 2**	
Treatment	**CON**	**BSG PROTECT**	**CON**	**BSG PROTECT + BSG 510**	**CON**	**BSG PROTECT + BSG 510**
Trial Duration	**16 - 40 weeks age**		**16 - 77 weeks age**		**16 - 77 weeks age**	
Birds Placed	20000	20000	4510	4600	4540	4600
Average Rate of Lay (%) 20 weeks - End	90.41%	93.03%	91.65%	91.36%	87.59%	90.22%
Peak Rate of Lay (%)	93.86%	95.80%	96.14%	95.96%	95.28%	95.28%
# Weeks with ROL >93%	3	12	32	29	5	17
Cumulative Eggs Hens Housed	135.28	140.06	332.93	344.24	319.27	342.76
Average Intake (g/day)	108.70	112.91	111.86	114.12	114.43	117.82
Average FCR (Kg/Doz)	1.44	1.46	1.47	1.49	1.59	1.58
Average Egg Mass (g)	52.01	54.88	53.83	53.48	51.41	52.79
Cumulative Mortality Trial Period	4.59%	4.14%	16.41%	11.35%	19.98%	15.66%

Table 1: Results Summary

Notes on Results:

In all three trials the flocks encountered a natural Spotty Liver (SLD) challenge. In the conventional trial the challenge occurred in the final 3 weeks of the trial period however results over that period demonstrated far greater resilience to the challenge from the Biostrong® Protect treated birds, Figures 1, 2 and 3.

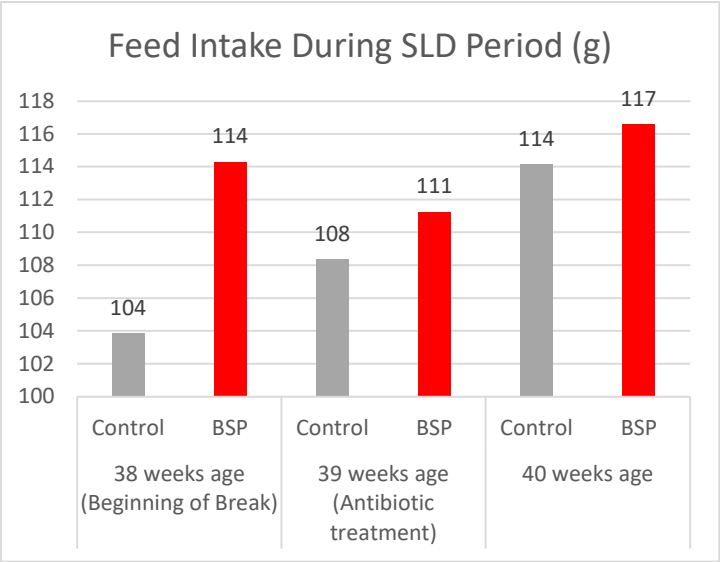


Figure 1: Feed Intake during Spotty Liver Challenge Conventional

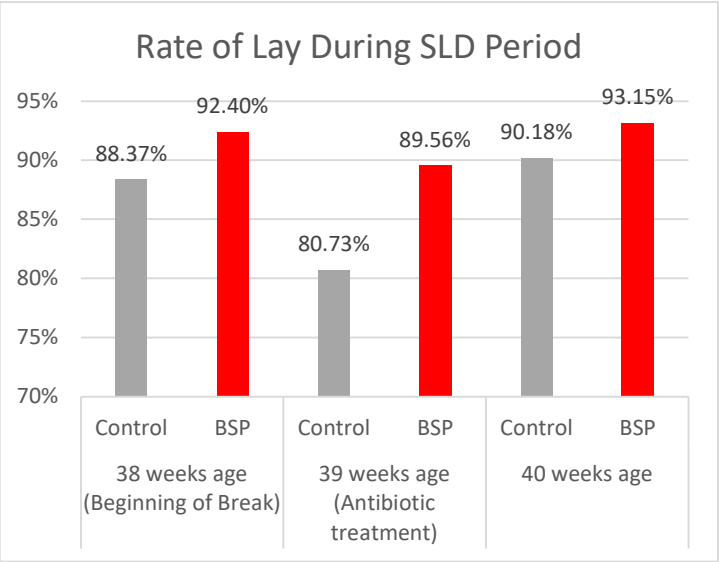


Figure 2: ROL during Spotty Liver Challenge Conventional

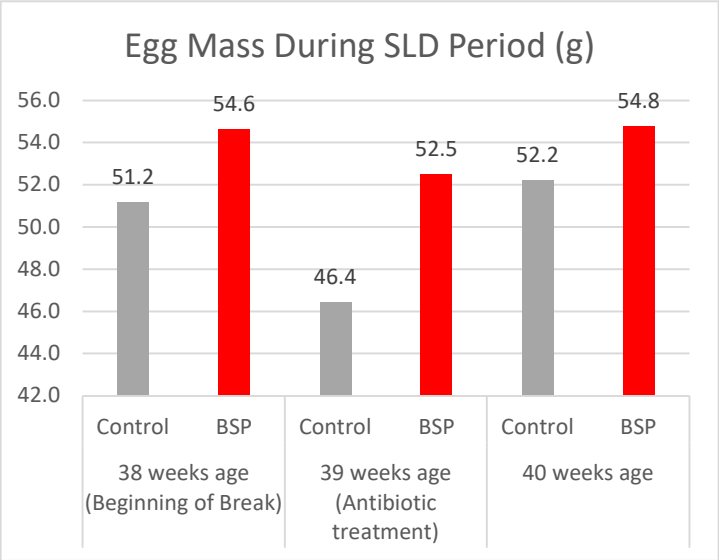


Figure 3: Egg Mass during Spotty Liver Challenge Conventional

In the two trials run with organically grown layers spotty liver was identified as being the major contributor to mortality and any reduced ROL between 20- and 40-weeks age. In these flocks both had much reduced mortality and in addition Biostrong® supplementation has possibly led to improved recovery in one of the flocks, Figures 4 and 5.

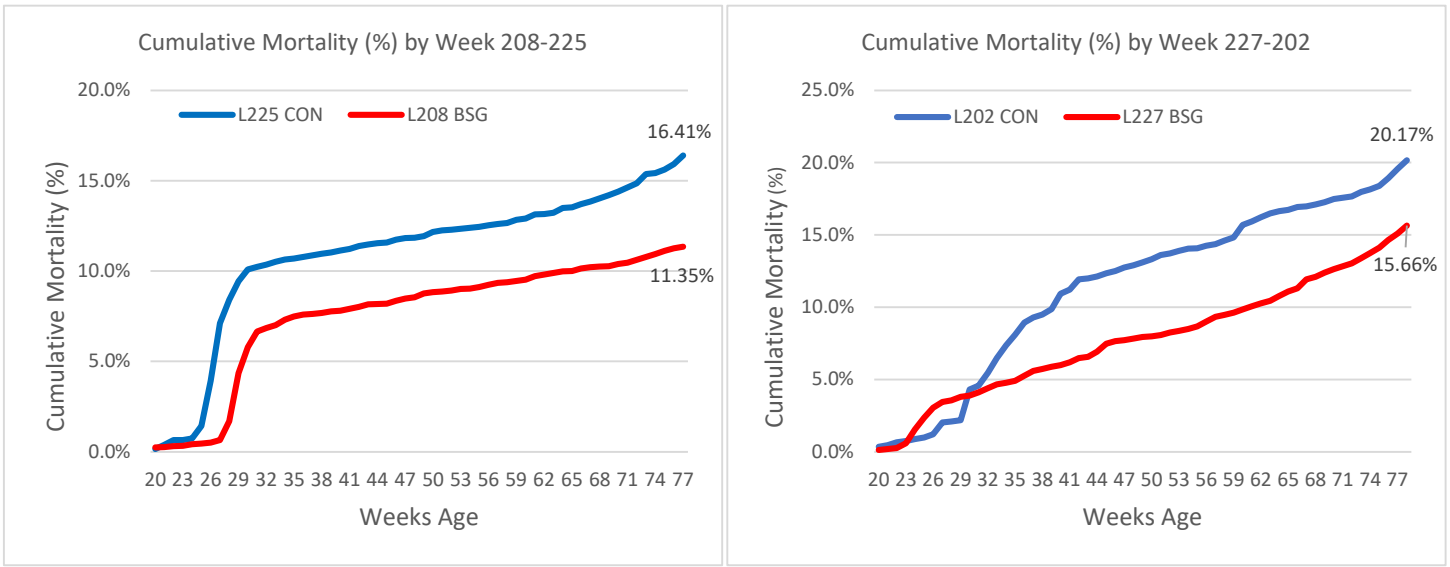
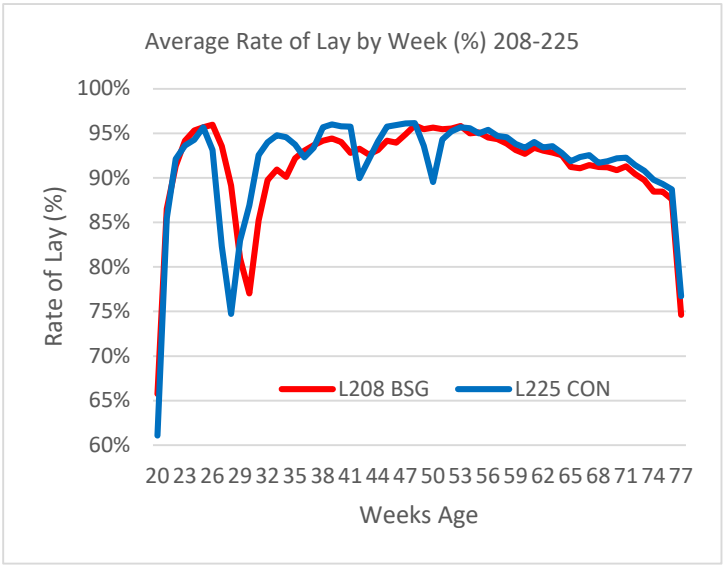


Figure 4: Cumulative Mortality in Organic Trials



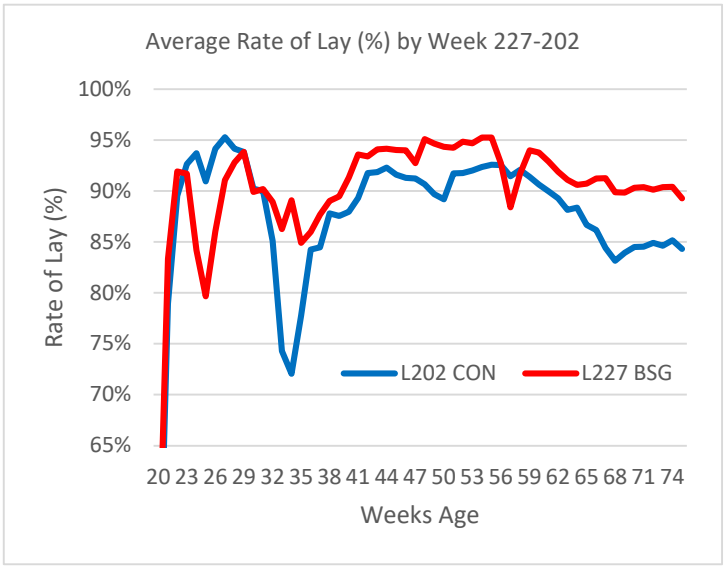


Figure 5: Average Rate of Lay in Organic Trials

In addition to the SLD challenge the conventional free-range trial was conducted across summer where the maximum daily temperature reached 40°C. It appears that during that period there was an increase in mortality in the control flock that was not identified in the treated flock, Figure 6.

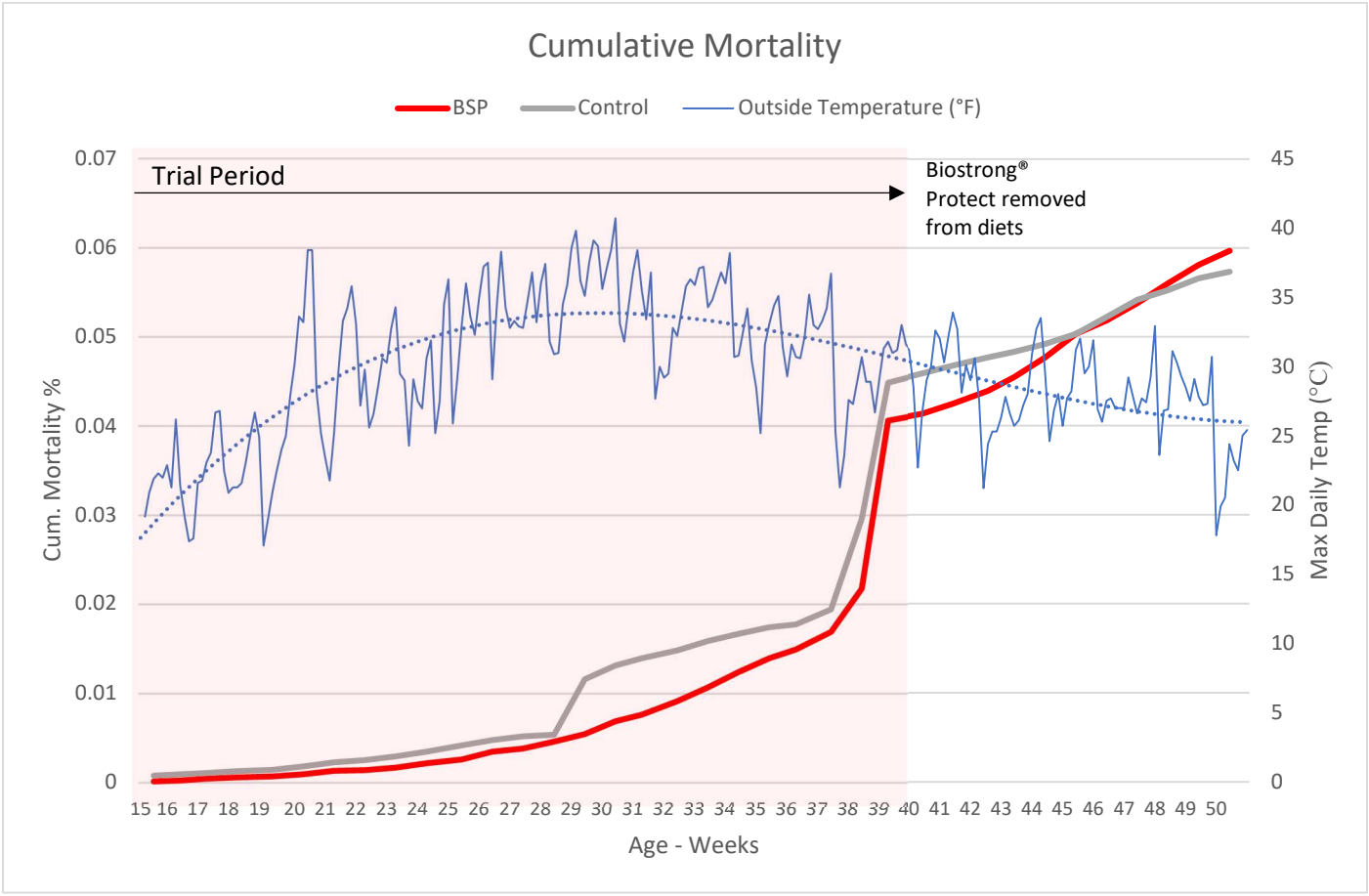


Figure 6: Cumulative Mortality – Peak of Summer Heat 28-30 weeks age.

Conclusion:

Application of the Biostrong® Portfolio encourages resilience and improved performance.

	Free Range Conventional	Free Range Organic Trial 1	Free Range Organic Trial 2
Treatment	**Difference from Control Biostrong® Protect**	**Difference from Control Biostrong® Protect + Biostrong® 510**	**Difference from Control Biostrong® Protect + Biostrong® 510**
Trial Duration	**16 - 40 weeks age**	**16 - 77 weeks age**	**16 - 77 weeks age**
Average Rate of Lay (%) 20 weeks - End	2.90% ↑	-0.32% ↓	3.00% ↑
Peak Rate of Lay (%)	2.07% ↑	-0.19% ↓	0.00% =
# Weeks with ROL >93%	4x ↑	1.1x ≈/↓	3.4x ↑
Cumulative Eggs Hens Housed	3.53% ↑	3.40% ↑	7.36% ↑
Average Intake (g/day)	3.87% ↑	2.02% ↑	2.96% ↑
Average FCR (Kg/Doz)	1.39% ↑	1.36% ↑	-0.63% ↓
Average Egg Mass (g)	5.52% ↑	-0.65% ↑	2.68% ↑
Cumulative Mortality Trial Period	-9.80% ↓	-30.83% ↓	-21.62% ↓

Table 2: Improvements over control

Take away points:

- Application of Biostrong® Protect to a flock's diet from placement to 40 weeks age in these three trials produced flocks with higher resilience to normal challenge seen in that period.
- Stopping Biostrong® Protect at 40 weeks of age leads to a loss of the benefits provided at the early stage.
- Switching from Biostrong® Protect to Biostrong® 510 and supplementing the entire flocks lifetime demonstrated in these trials that the early benefits achieved can be maintained leading to less mortality and improved performance.
- While not presented in these trials Biostrong® 510 is an EU EFSA Zootechnically registered product that does have an accepted matrix available to reduce feed cost. Application of Biostrong® Protect followed by application of Biostrong® 510 whilst applying part of the matrix value can be shown to deliver improved performance at net zero cost.