



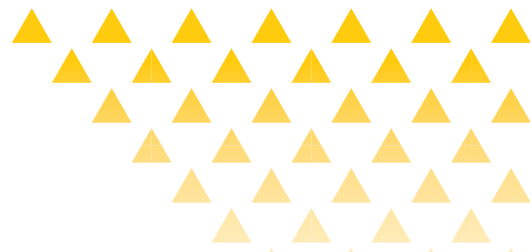
## Salbiotic, a professional sniper

Over the last 15 years a continuous reduction in the incidence of *Salmonellosis* in humans could be observed, supported by the implementation of several regulations at EU level (see Fig. 1) and national *Salmonella* control programmes. Since 2014, however, human *Salmonellosis* cases are on the rise again, as is evident from recent reports by the European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority (EFSA). In the same period, a small increase in *Salmonella* prevalence has been observed

in consumption eggs in EU. Although this will have certainly contributed, it is today not completely clear what the main reasons are for the increased human *Salmonellosis* cases in EU. Are people becoming less conscious about the risk and neglect basic hygienic rules, has the animal become more susceptible to *Salmonella* colonization or is *Salmonella* itself better adapted to, and therefore more frequent present in the environment, or are changes in the poultry production process responsible?

REGULATION EC NO 2160/2003	BASIC REGULATION
REGULATION EC NO 1688/2005	SPECIAL GUARANTEES CONCERNING SALMONELLA IN CERTAIN MEAT & EGG PRODUCTS
REGULATION EC NO 1777/2006	REQUIREMENTS FOR USE OF ANTIMICROBIALS & VACCINES IN CONTROL PROGRAMMES
REGULATION EC NO 1237/2007	TRADE RESTRICTIONS ON TABLE EGGS
REGULATION EC NO 2008/798/EC	RESTRICTIONS ON IMPORT OF LIVE POULTRY & EGGS
REGULATION EC NO 200/2010	FINAL TARGET SET FOR REDUCTION IN BREEDER FLOCKS
REGULATION EC NO 517/2011	FINAL TARGET SET FOR REDUCTION IN COMMERCIAL LAYER FLOCKS
REGULATION EC NO 200/2012	FINAL TARGET SET FOR REDUCTION IN BROILER FLOCKS
REGULATION EC NO 1190/2012	FINAL TARGET SET FOR REDUCTION FATTENING & BREEDER TURKEY FLOCKS

Figure 1. European regulations regarding the control of *Salmonella*



In order to control *Salmonella* contamination in poultry and eggs it is important not only to work on preventive measurements aimed at reducing the incidence of *Salmonella* having contact with birds but also, once contact took place, to immediately reduce the risk of intestinal colonization and systemic spreading to internal organs.

**Salbiotic** is a functional feed ingredient combining ‘activated’ medium-chain fatty acids (MCFA) with lactic acid to achieve maximum functionality against colonization, growth and invasion of *Salmonella* in the small intestine, by providing an early antibacterial barrier in the stomach. MCFA are very effective at inhibiting the growth of *Salmonella* (by damaging the bacterial cell wall, acidifying its content and blocking DNA duplication) because of their low minimal inhibitory concentration (MIC), which is more expressed at lower pH (see Fig. 2). Due to its low pKa value and its permeabilizing effect on the bacterial cell wall, lactic acid works synergistically with MCFA against *Salmonella* by reducing the pH in the upper gastro-intestinal tract and making the bacterial cell wall better penetrable for the MCFA.

For an effective nutritional strategy against *Salmonella* it is of utmost importance that the dietary approach does not intervene with other control measures, such as vaccination. In a recent study performed by Nuscience, it was shown that in-feed MCFA at the advised dosage do not negatively affect vaccination efficiency of chickens with live *Salmonella* bacteria. In this study, control fed and MCFA-supplemented breeder hens were vaccinated at one day of age by oral inoculation of Avipro®*Salmonella* Duo, a bivalent vaccine containing attenuated live *S. Enteritidis* and *S. Typhimurium* bacteria. Efficacy of vaccination was evaluated by determining the number of *Salmonella* bacteria in the caeca after vaccination at 6 and 13 days of age. At none of the sampling points a difference could be observed in neither *S. Enteritidis* nor *S. Typhimurium* counts in the caeca of birds of both groups.

To conclude, Salbiotic is highly effective at reducing *Salmonella* colonization and spreading in chickens. It acts precise, causes no collateral damage, is safe to use and is perfectly compatible with other control measures: a unique element for any integrated anti-*Salmonella* approach!

	Number of <i>Salmonella</i> Typhimurium strains with MIC of (mM)								
	0.625	1.25	2.5	5	10	20	40	80	160
<b>Caproic acid (C6)</b>									
pH 4	-	3	<b>51</b>	-	-	-	-	-	-
pH 6	-	-	-	-	-	-	7	<b>47</b>	-
<b>Caprylic acid (C8)</b>									
pH 4	-	<b>51</b>	2	1	-	-	-	-	-
pH 6	-	-	-	-	-	-	<b>47</b>	7	-

**Figure 2.** Minimal inhibitory concentration (MIC) of the MCFA caproic and caprylic acid against *Salmonella* Typhimurium (adapted from Boyen et al., 2008)

Claims associated with products may be different based on government requirements. Certain statements may also not be applicable in all regions.

**For more information**

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