

The addition of galacto-oligosaccharides on the feed for the control of salmonellosis in fattening pigs

Vico, J.P.

Mainar-Jaime, R.C.¹; Auseré, M.²

¹Centro de Investigación y Tecnología Agroalimentaria (CITA) de Aragón. Ctra. Montañana, 930. 50059 Zaragoza, Spain.

²Agropienso Sociedad Cooperativa. C/ Zaragoza, 5. 22500 Binéfar, Huesca, Spain.

*Centro de Investigación y Tecnología Agroalimentaria (CITA) de Aragón. Ctra. Montañana, 930. 50059 Zaragoza, Spain.

e-mail: rmainar@aragon.es; fax: +34 976 716335

Abstract

Prebiotics that block intestinal harmful bacteria and stimulate both the activity of beneficial bacteria and the animal immune system may help in controlling pig salmonellosis. We added a galacto-oligosaccharide (Salmosan®) on the diet of pigs during the whole period of fattening to assess its potential effect on the prevalence of *Salmonella* spp. In a first trial 56 pigs from a small fattening unit (<200 animals) were fed with a diet where Salmosan® (0.5 kg/Ton of feed) was added, while the rest of the animals were fed with the same feed without the galacto-oligosaccharide. Samples of blood serum were collected after 1 and 2 months of fattening and previous to slaughter. Individual feces were collected after 1 and 2 months of fattening. Mesenteric lymph nodes (MLN) were also collected at slaughter. The Herdcheck *Salmonella* ELISA (IDEXX Laboratories) and the ISO 6579:2002 were used for serological and microbiological analyses, respectively. The prevalence at slaughter was slightly lower in the treated group compared to the control group, but no significant differences were observed (42.9% vs. 54.8%; $P=0.25$). No significant differences were found in seroprevalence or prevalence between the two groups at any of the collection times either. In a second trial a much higher dose (3 kg/Ton of feed) was used. At this dose significant differences of seroprevalence were observed after 60 days of fattening and at slaughter when a cut-off value of %OD 40% was used (10% vs. 37.5%; $P=0.01$). Prevalence was also significantly lower at slaughter either on feces (2.6% vs. 57.8%; $P=0.01$) or MLN (0% vs. 78.7%; $P=0.01$). These results suggest that the addition of galacto-oligosaccharides on the diet of fattening pigs might be useful to reduce the burden of salmonellosis in fattening pigs. Further research is required to confirm results and optimize the dose and time of treatment.