



RESEARCH ■ REVIEW >

RESEARCH

Purina® Equine Senior® Horse Feed with ActivAge® Supports Senior Horses Through the Aging Process by Promoting an Optimal Response to Influenza Vaccination

A SUMMARY OF RESEARCH CONDUCTED BY PURINA ANIMAL NUTRITION IN COLLABORATION WITH THE GLUCK EQUINE RESEARCH CENTER AT THE UNIVERSITY OF KENTUCKY EVALUATING THE EFFECTS OF FEEDING PURINA® EQUINE SENIOR® HORSE FEED WITH ACTIVAGE® ON THE IMMUNE RESPONSE IN SENIOR HORSES.¹

< BACKGROUND >

As horses age, many undergo a decline in immune function known as immunosenescence. This decline is typically characterized by not only a decline in the immune cell function in response to stressors and infection, but also a reduced antibody response to vaccinations.² This reduction in antibody response may be linked to an increased susceptibility to disease or inability to optimally respond to an infectious challenge. In addition to supporting the unique nutritional needs of the senior horse, the daily diet represents an opportune method by which to provide dietary support to the immune system. ActivAge® is a unique prebiotic additive that is derived from the fermentation of the *Saccharomyces cerevisiae* yeast. This prebiotic is composed of not only the beneficial yeast, but also its metabolites such as antioxidants, beta glucans, vitamins, and other compounds aimed at supporting the immune function of the senior horse. To that end, a trial was conducted to evaluate the effects of feeding Purina® Equine Senior® Horse Feed with ActivAge®, added at varying levels, to senior horses on their response to both novel and known vaccinations.

< MATERIALS AND METHODS >

Thirty-two senior horses of mixed-sex and mixed-breed were utilized in this study. Horses were randomly assigned to one of four treatment groups. Equine Senior® (n=8; ES), Equine Senior® + ActivAge® Level 1 (n=8; ESA1), Equine Senior® + ActivAge® Level 2 (n=8; ESA2), and Equine Senior® + ActivAge® Level 3 (n=8; ESA3) for a period of 84 days. Horses were fed to meet or exceed NRC requirements for horses at average maintenance. All horses had free-choice access to mixed-grass hay and were housed on pasture. Horses were fed individually twice daily. Horses were vaccinated with a novel antigen (Keyhole limpet hemocyanin; KLH) on day 28 and day 42 of the study. Also, on day 42, horses were vaccinated with an equine influenza vaccine (Fluvac Innovator; Zoetis). Prior to vaccination and two-weeks post vaccination, blood samples were obtained via jugular venipuncture to determine influenza and KLH-specific immune responses via an antigen-specific ELISA and hemagglutination-inhibition assay. Horses were weighed and assigned body condition scores through out the course of the trial.

¹ HR 192. The effects of ActivAge® on senior horses immune response to vaccination. Gordon, M.E. et al. 2013. Internal Research, PANCI.

² Adams, A. Equine Disease Quarterly. 2012 April, 21 (2). The 'Older' Horse: An Immunological Perspective.

< RESULTS >

All horses remained healthy throughout the course of the trial and in fact, the body condition of all horses improved during the study period. Antibody titers specific to equine influenza were higher in ESA2 than in ES or ESA3 at day 56 ($P<0.05$; **Figure 1**). The greatest increase in equine influenza antibody titers was in ESA1 ($P<0.05$; **Figure 2**). No treatment effects were observed on KLH-specific vaccination response.

< CONCLUSIONS AND IMPLICATIONS >

The nutritional needs of the senior horse are unique compared to that of other groups of horses. As such, the development of Purina® Equine Senior® Horse Feed represented a novel approach to feeding senior horses when it was developed. As our understanding of the unique physiology of the senior horse has progressed, we now recognize the ability to support immune function via non-nutritive additives, such as ActivAge® prebiotic. These data show that Purina® Equine Senior® Horse Feed with ActivAge® can support the senior horses' immune response to vaccination. Due to breakthroughs in veterinary care and nutritional support, horses are living longer and more functional lives than before. Nutritional support of the immune system is an efficacious tool to help maintain the senior horses' quality of life, and Purina® Equine Senior® Horse Feed with ActivAge® has demonstrated its ability to support the immune function in senior horses.

FIGURE 1

Influenza antibody titers through 14-days post vaccination.

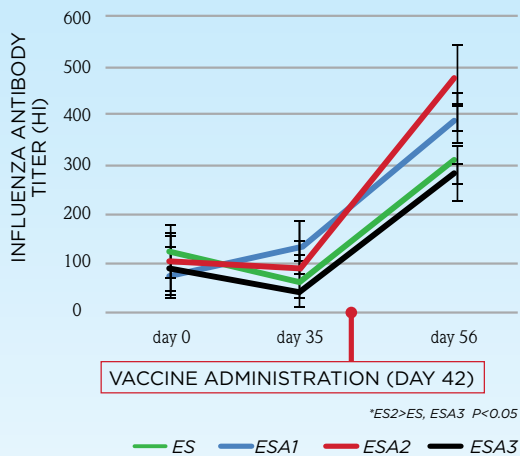
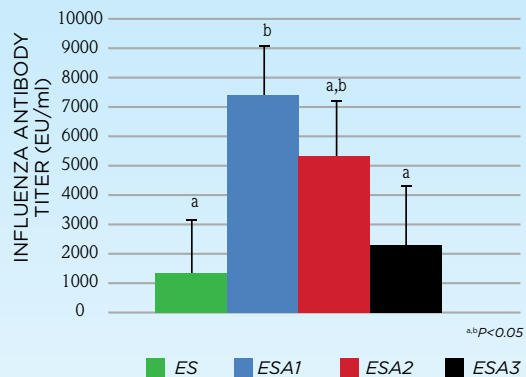


FIGURE 2

Change in Influenza antibody titers following vaccination.



< FOR MORE INFORMATION > Contact your local Purina representative if you would like more information about this study.