

ANIMAL SCIENCE

Title: Critical Review of Functional Animal Proteins – NPB #04-142

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Abstract:

We have reviewed the scientific literature on the use of functional animal proteins in pig diets for the purpose of improving pig health and productive performance. Our focus is on physiological effects beyond provision of bioavailable nutrients. We address both the proposed mechanisms of action and the empirical data on practical results. Products considered are spray-dried plasma, dried porcine solubles, milk proteins and egg products. Spray-dried plasma continues to increase growth rate dramatically, on average more than 20%, when fed for a short time after weaning. There appears to be a small reduction in growth rate after plasma is removed from the diet, but some advantage is retained. Recent data suggest plasma also provides protection against enteric disease. The limited data on dried porcine solubles are encouraging, but conclusions remain tentative. Among milk proteins, those in whey appear to provide modest benefits. It is not yet clear whether conventional egg products provide physiological benefits, but they are clearly less powerful than is spray-dried plasma. Appropriately-targeted immune egg products can provide impressive protection against enteric disease. In summary, spray-dried plasma and immune egg products provide dramatic benefits, whey proteins provide modest ones, and the benefits of dried porcine solubles and of conventional egg products remain unclear.

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