

Effect of commercial feed additives in nursery and finishing pig diets containing DDGS on nutrient digestibility and growth performance

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Ten commercially available feed additives (Allzyme SSF, Bactocell, BioPlus 2B, Econase XT25, Hemicell, Prozyme 9302, Releez-a-zyme 4M, Rovabio AP 10%, Roxazyme G2G, XPC yeast) were selected based on their potential to affect energy and fiber digestion, or their ability to modulate gastrointestinal bacterial ecology. A total of 192 nursery pigs (11.9 kg initial BW) and 96 finishing pigs (98.4 kg initial BW) were allotted to individual stainless steel pens and fed their respective diets for 5-wk. Diets contained corn, soybean meal, and 30% dried distillers grains with solubles (DDGS), were adequate in all nutrients (NRC, 1998), and were offered ad libitum in meal form. Additives were added at the recommended rates and were assumed to contain the active ingredients and activity level listed on the product label. Titanium dioxide was added as an indigestible marker to determine apparent DM, C, N, S, EE, ADF, and NDF digestibility at the end of wk 1, 3, and 5. Data were analyzed using ANOVA with group, room, gender, week, and diet included in the model. There were no week × diet interactions. In nursery pigs, digestibility of most nutrients were unaffected by additives. Roxazyme tended to improve N and S digestibility ($P < 0.1$), and Rovabio and BactoCell tended to improve ($P < 0.06$) S digestibility compared with the unsupplemented control diet. However, Porzyme and Hemicell tended to decrease ($P < 0.09$) NDF digestibility, and Econase, Allzyme, and Rele-e-zyme decreased digestibility of various nutrients. Additives had no effect on ADG, ADFI, and G:F ($P > 0.1$). For finisher pigs, all additives had minimal effects on digestibility of most nutrients. Roxazyme tended to improve ($P < 0.08$) EE, and Allzyme and Bioplus2B tended to improve ($P < 0.1$) ADF digestibility. Addition of Porzyme, Hemicel, Rel-e-enzyme, XPC yeast and BactoCel caused negative effects on digestibility of various nutrients. Additives had no effect on finishing pig growth performance. In conclusion, addition of these commercial additives to corn-soybean meal-30% DDGS diets have minimal effects on nutrient digestibility in nursery and finishing pigs, and do not improve growth performance.

Key words: swine, enzymes, DDGS