

arranged as a 2 × 3 factorial utilizing diets containing DON contaminated corn and DDGS (QC; complete diet average ~3.2 ppm DON) with the following factors: 1) 0.25% sodium metabisulfite (SMBS) vs. 0.25% Defusion vs. 0.25% Defusion Prime and 2) no yeast derivative (YD) vs. 0.1% YD. Additionally, a clean control with no additives (PC; complete diet average ~1.1 DON) was included. Pen weights were obtained on d 0 and d 18, mortalities and removals were tracked, and growth performance parameters were calculated. Return over feed cost (ROFC) was calculated assuming \$2.20 per kg of gain. Orthogonal contrasts were constructed as follows: PC vs QC + SMBS, main effects for SMBS vs. Defusion products (DP; Defusion and Defusion Prime), Defusion vs Defusion Prime, no YD vs. YD, and all possible interactions. Data were analyzed using PROC GLIMMIX in SAS 9.3 (SAS Inst. Inc., Cary, NC). The PC treatment had greater ADG, ADFI, final BW, G:F, and ROFC compared to pigs fed QC + SMBS ($P < 0.010$). Compared to SMBS, the addition of DP without YD improved G:F, but did not impact G:F in diets with YD (Interaction effect, $P < 0.010$). Inclusion of DP increased ADG, ADFI, G:F, final BW, and ROFC compared to SMBS ($P < 0.010$). The probability of mortalities and removals occurring was reduced ($P < 0.050$) for DP compared to pigs fed SMBS. Defusion Prime increased ADG, final BW, and ROFC compared to pigs fed Defusion ($P < 0.050$). Gain to feed was not further improved with the addition of Defusion Prime compared to Defusion ($P > 0.100$). Inclusion of YD improved ADG, G:F, and ROFC ($P < 0.010$), but did not improve ADFI ($P > 0.100$). In QC diets, Defusion products were more effective than SMBS in alleviating some negative performance effects, and performance was superior for Defusion Prime compared to Defusion.

Key Words: deoxynivalenol, growth, nursery pig

235 Evaluation of Dietary Phytochemicals on Growth Performance and Carcass Characteristics of Pigs during the Growing-Finishing Phase. J. A. Soto*,

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Phytogenic feed additives are plant-derived compounds incorporated into animal feed with the goal of improving animal health and performance. Previous research with the use of phytogenics during the growing-finishing phase suggested that the combination of two essential oil mixtures elicited improved ADFI, HCW, and carcass ADG compared to a regimen without the use of any additive. To further confirm these observations, a total of 317 pigs (DNA 600 × 241, initially 49.3 kg BW) were used in an 87-d trial to determine the effects of two essential oil mixtures tested individually, and in combination on growth performance and carcass characteristics of growing-finishing pigs from 49 to 130 kg. Pens of 9 or 10 mixed sex pigs were allotted by BW and randomly assigned to 1 of 4 dietary treatments with 8 replications per treatment. Pigs were fed a nutritional program with 4 dietary phases with the same treatments fed in all 4 phases. Experimental treatments included a control diet with no feed additives or the control with 0.02% essential oil mixture 1 (EOM 1) containing caraway, garlic, thyme, and cinnamon; 0.013% essential oil mixture 2 (EOM 2) containing oregano, citrus, and anise; and lastly the combination of 0.02% EOM1 and 0.013% EOM2 (EOM 1 + 2). At d 87, pigs were transported to a packing plant for processing and carcass data collection. There was no evidence for treatment differences for overall ADG, ADFI, or G:F. Similarly, there was no evidence for treatment differences in HCW, carcass yield, backfat, loin depth or percentage lean. In summary, inclusion of these phytogenic feed additives did not influence growth or carcass performance. Responses to feeding phytogenic additives have not been consistent among research studies. Consequently, more evidence is needed to confirm if beneficial effects on pig performance are consistently realized before these products are included in swine diets.

Key Words: essential oils, feed additives, growing-finishing pigs

	Feed additive				SEM	<i>P</i> -values	
	Control	EOM 1	EOM 2	EOM 1 + 2		E1XE2	EOM 1
ADG, g	912	908	918	912	7.0	0.908	0.466
ADFI, g	2,833	2,783	2,828	2,842	34.6	0.333	0.572
G:F	0.322	0.327	0.325	0.321	0.0033	0.193	0.913
Final BW, kg	129.4	128.4	129.7	129.1	1.01	0.817	0.242
HCW, kg	101.0	99.8	101.0	101.3	0.83	0.465	0.465
Carcass yield, %	74.8	75.0	74.8	74.9	0.31	0.948	0.594

E1XE2 Interaction between EOM 1 and EOM 2.

EOM 2 *P*-values for ADG, ADFI, G:F, Final BW, HCW, and carcass yield were 0.532, 0.415, 0.579, 0.524, 0.224, and 0.881, respectively.