

sex as main effect. The castrates ate more feed (2.83 vs. 2.67 kg/d; $P = 0.04$) and grew faster (989 vs. 937 g/d; $P = 0.03$) than entire gilts but the feed conversion ratio was similar (2.86 vs. 2.84 kg/kg; $P > 0.05$). The highest IMF content was found in meat from castrates (5.0 vs. 4.3%; $P = 0.09$). The proportion of total saturated FAs was higher in IMF from immunocastrated than in that from entire gilts (40.8 vs. 38.4%; $P < 0.0001$) due to the higher content in C16:0 ($P < 0.0001$), C18:0 ($P < 0.0001$) and C20:0 ($P = 0.02$). However, the percentage of total monounsaturated FAs was lower in immunocastrates (50.8 vs. 52.3%; $P = 0.004$) because of the lower content in C18:1n-9 ($P = 0.002$). The castrates had lower proportion of C18:2n-6 ($P < 0.10$) and C20:4n-6 ($P = 0.01$) than entire gilts which carried out a lower total polyunsaturated FA percentage (8.34 vs. 9.25%; $P = 0.06$) and polyunsaturated FA/saturated FA ratio (0.20 vs. 0.23; $P = 0.01$) in immunocastrated animals. It is concluded that the immunization against GnRF in gilts improved growth performance and increased the IMF content of meat but impaired its quality related to fatty acid profile.

Key Words: gilt immunocastration, growth performance, fat composition

W445 Performance of growing-finishing pigs fed brewers rice and dried distillers brewers yeast. T. Dokes and O. Gekara*, *University of Arkansas Pine Bluff, Pine Bluff.*

The objective of this study was to determine whether brewers rice and dried distillers brewers yeast can replace all corn and soybean meal, and, significantly increase performance of growing-finishing pigs. Sixty-four Yorkshire \times Duroc \times Hampshire crosses (BW = 72 \pm 13 kg) were randomly assigned to 4 diets: (1) corn/soybean meal (CSM; control); (2) brewers rice/soybean meal (RSM); (3) corn/dried distillers brewers yeast (CBY); (4) brewers rice/dried distillers brewers yeast (RBY). The 4 diets were formulated to be isonitrogenous. The experiment lasted 28 d; BW of finished pigs = 95 \pm 14 kg. Variables determined included ADG, apparent total tract digestibility (ATTD) of nutrients (mainly N and P), fecal DM output, G:F, and back fat thickness. All data were analyzed using ANOVA of SAS. Compared with pigs fed on CSM and CBY diets, pigs on RSM and RBY diets gained faster (0.868 vs. 0.730 kg/d; $P < 0.01$), had reduced fecal DM output (0.299 vs. 0.607 kg/d; $P < 0.001$), and fecal loss of N (0.012 vs. 0.020 kg/d; $P < 0.01$) and P (0.012 vs. 0.017 kg/d; $P < 0.01$), had greater ATTD (89.7 vs. 78.9%; $P < 0.001$) and G:F (0.30 vs. 0.25 kg/kg; $P < 0.01$). Pigs fed on RSM and RBY tended ($P < 0.10$) to deposit more back fat compared with CSM and CBY pigs. Brewers rice and dried distillers brewers yeast can complement each other and greatly reduce fecal loss of N and P; thus,

can effectively replace corn and soybean meal in diets for growing-finishing pigs.

Key Words: brewers rice, dried distillers brewers yeast, pig

W446 Effects of vegetable oils and residue of winemaking on performance, carcass traits, and pork quality. T. M. Bertol*¹, R. M. L. de Campos², E. A. P. de Figueiredo¹, and V. L. Kawski¹, ¹*Embrapa Suínos e Aves, Concórdia, SC, Brazil*, ²*Fundação Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.*

A 38 d study was carried out to evaluate the effect of dietary oil and grape bagasse on performance, carcass traits and pork quality. Forty barrows with a genetic composition of 50% Landrace, 25% Moura, and 25% Large White, averaging 80.12 \pm 4.95 kg, were utilized. Treatments (TREAT) compared were (1) Control: corn-soybean meal based diet; (2) Diet with 1.5% of canola oil (CAN) + 1.5% of flax oil (FLAX); (3) Diet with 1.5% of CAN + 1.5% of FLAX, and 3 and 5% of grape bagasse (GB), for 21 and 17 d, respectively; (4) Diet with 1.5% of CAN + 1.5% of FLAX, and 6 and 10% of GB, for 21 and 17 d, respectively. The diets of TREATs 2, 3 and 4 were maintained isocaloric by replacing wheat bran by GB. The ANOVA model included block (initial weight), and TREAT. Means were compared by protected *t*-test and by orthogonal contrasts: TREAT 1 vs. TREATs 2, 3 and 4; TREAT 2 vs. TREATs 3 and 4; and TREAT 3 vs. TREAT 4 ($P < 0.10$). Average daily gain (ADG) and final weight (FW) increased with dietary oil supplementation (FW = 112.8 \pm 1.69^b, 120.1 \pm 2.00^a, 118.6 \pm 2.47^a, 115.9 \pm 2.68^{ab} kg; ADG = 0.862 \pm 0.041^b, 1.044 \pm 0.035^a, 1.016 \pm 0.037^a, 0.944 \pm 0.051^{ab} kg, for TREATs 1, 2, 3, and 4, respectively; $P < 0.01$). FW reduced with the inclusion of GB in the diet (contrast TREAT 2 vs. TREATs 3 and 4; $P < 0.05$). Backfat thickness, loin eye area and meat/fat ratio were not affected ($P > 0.05$) by TREATs. The values of pH 24 h after slaughter were higher on TREAT 2 than in the other TREATs (pH 24 h = 5.59 \pm 0.03^b, 5.71 \pm 0.04^a, 5.61 \pm 0.01^b, 5.62 \pm 0.04^b; $P < 0.06$). Ether extract (EE) of loin was lower and shear force (SF) was higher in the TREATs 2, 3 and 4 (EE = 2.36 \pm 0.23, 1.84 \pm 0.06, 1.92 \pm 0.22, 2.00 \pm 0.22%; SF = 1.86 \pm 0.15, 2.25 \pm 0.25, 2.18 \pm 0.17, 2.39 \pm 0.21 kg; contrast TREAT 1 vs. TREATs 2, 3 and 4; $P < 0.05$). In conclusion, dietary supplementation with CAN and FLAX, associated to wheat bran and GB, improved growth performance and decreased the intramuscular fat and tenderness, but it did not affect carcass traits. The inclusion of GB in the diet did not affect carcass traits, but the highest level of inclusion decreased growth performance.

Key Words: canola oil, flax oil, grape bagasse