

Feeding Field Peas to Market Pigs had Only Minimal Effects on Carcass Composition, Meat Quality, or Cooked Pork Palatability

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The objective of this study was to determine if field peas fed at various levels to growing-finishing pigs affected pig performance, carcass composition, meat quality, or cooked pork palatability. Forty-eight pigs (initial BW: 22.7 ± 1.41 kg) were fed a three phase program during the grower and finisher periods (34, 36, and 46 days, respectively). Pigs were assigned to one of three dietary treatments: CONTROL (corn, soybean meal, no field peas); FP1 (corn, soybean meal, and 36% field peas in all three phases), or FP2 (corn and 66% field peas in phase 1, 48% field peas in phase 2, and 36% field peas in phase 3). Pigs were harvested at an average weight of 123.6 ± 1.06 kg. Average daily weight gain (ADG), average daily feed intake (ADFI), and average gain to feed ratio (G:F) were measured within each phase and for the entire experiment. Carcass traits measured were hot carcass weight, loin eye depth, loin eye area, tenth rib fat, and percent muscle. Longissimus traits measured were 24-h pH, color score, marbling score, Minolta L*, fat color (L*, a*, b*), purge loss, drip loss, cooking loss, and Warner-Bratzler shear force. A trained sensory panel evaluated cooked longissimus chops for tenderness, juiciness, flavor intensity, and off-flavors, and cooked ground pork patties for texture, juiciness, flavor intensity, and off-flavors. There were no differences in pig performance during any of the three phases. Likewise, for the entire experimental period, ADG (871, 860, and 889 g/day for CONTROL, FP1, and FP2, respectively) and average G:F (0.319, 0.331, and 0.317 kg/kg for CONTROL, FP1, and FP2, respectively) did not differ among treatment groups. Lean color score was higher/darker ($P < 0.05$) for FP2 (3.22) than for

CONTROL (2.41) and FP1 (2.72). Drip loss was lower ($P < 0.05$) for FP2 (1.95%) than for CONTROL (3.39%) and FP1 (2.51%). Patties from FP2 carcasses had a higher ($P < 0.05$) incidence of “stale” off-flavors (1.5%) than patties from CONTROL (0.0%) and FP1 (0.5%) carcasses ($P < 0.05$). All other response variables were not affected by dietary treatment. In conclusion, feeding field peas to market pigs had no effect on pig performance and carcass composition and only minimal effects on meat quality and palatability. Therefore, field peas may replace all soybean meal and a portion of the corn in diets for growing and finishing pigs.

Key Words: Carcass quality, Field peas, Palatability, Pigs.