Abstracts of the Wildlife and Fisheries Poster Session

Multidisciplinary Evaluation of No-till Corn Grazing Systems in Mississippi

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Abstract: To ascertain potential ecological and landowner benefits of non-conventional agricultural systems, we studied cattle production and mourning dove (*Zenaida macroura*) utilization in fields that allowed cattle to forage on no-till planted corn. In 2005–2008, four cattle-grazed, no-till cornfields (SHS) and combine-harvested cornfields (CHS) were established in four Mississippi counties. Vegetation characteristics, residual grain quantities, and dove use were measured on SHS and CHS. Steer average daily gains (ADG), quality grades, and feedlot days were estimated for cattle grazed on SHS. These estimates were compared to traditional cattle production methods. Dove numbers were greater on SHS than CHS during all study years and site locations ($P = 0.001$). Biomass of residual corn kernels on soil surface and percentage coverage of grasses and forbs was greater on SHS compared to CHS in fall ($P = 0.001$). Comparisons of beef production metrics between corn-grazed and conventionally-produced cattle indicated that corn-grazed cattle produced quality grades of meat that were similar to conventionally-produced cattle ($P = 0.256$) with fewer feedlot days required for finishing ($P = 0.033$). Estimated net income using this production system equaled US$615–$1,842/ha using natural beef markets and dove hunting fees. Marketing of no-till, corn-grazed cattle through natural beef markets resulted in estimated net income increases of $370–$1,596/ha over an average net income of $250/ha (±100) in traditional beef markets. Natural beef production and fee-dove hunting on SHS resulted in an estimated potential net income of $370–$1,596/ha compared to $700–$1,264/ha on CHS. A SHS landowner may potentially earn a greater profit than a traditional row crop producer with less perturbative landscape impacts from erosion and multiple applications of chemicals. We submit that pasture-based production systems, such as this one, can aid in creation and diversification of income to rural landowners through sustainable beef production, dove hunting opportunities, and lower impacts to agricultural lands and wildlife habitat.

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