OVARIAN DYSPLASIA AND NEOPLASIA AS CAUSE OF CULLING BEEF CATTLE IN SOUTHERN FLORIDA

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Objective of the study: To characterize the gross and microscopic morphologic changes in ovaries in a population of beef cows that as repeat breeders were culled and submitted to slaughter.

Methodology: Forty (40) repeat breeder beef cows ranging from 5 to 10 years of age palpated open and were sent to slaughter. The cows belonged to a ranch in southern Florida totaling 10.000 heads of European breeds. The reproductive tracts of the cows were collected , grossly examined, and tissue samples from ovaries, oviduct, uterine body, uterine horns, liver and kidney were taken for histological evaluation. Tissue samples from liver and kidney were frozen for toxicological analyses.

Results: At gross examination 14 of the 40 cows were determined to be pregnant. Three ovaries had cystic follicles. Ovarian neoplasms were identified in 3 cows. Histopathologically, 7 additional cows were identified with ovarian neoplasia. Ovarian dysplastic changes were detected in 19 cows. The ovarian neoplasms were diagnosed as granulosa cell tumors. Of these, 7 of the 10 neoplasms were bilateral; three were unilateral with conta lateral dysplastic changes in all 3 of the cases. Dysplastic changes were unilateral or bilateral and consisted of solid cords of gonadal-stromal cells, intermingled by slits and channels . The rete ovarii often was characterized by adenomatoid hyperplasia. Depending on the distribution and size the dysplastic changes were classified as mild, moderate or marked. The latter group blended into small neoplastic growths (granulosa cell tumors). In addition to the dysplastic and neoplastic changes the ovaries showed evidence of expected germinative structures including follicular atresia and corpora lutea involution.

Some of the livers had fibrotic changes on microscopic examination; the kidneys did not yield any significant histopathologic changes.

Conclusion: Ovarian dysplasia was the most common pathologic lesion identified in culled, repeat breeder beef cows (48% in this study). Similar changes (55%) were noted in a previous study on a second ranch nearby with 2500 heads of cattle. Ovarian dysplasia is a poorly described condition in cattle with only a few references addressing the issue in the literature. Possible etiologies to consider include plant phytoestrogens, endocrine disrupters (described in alligators at Lake Okeechobee close by the two ranches), cyanobacterial toxins and mycotoxins (zaeranozole) in feed.