

DETERMINING MORPHOLOGICAL AND BIOCHEMICAL PARAMETERS ASSOCIATED WITH EARLY OVARIAN FOLLICULAR ATRESIA IN WHITE STURGEON FEMALES

Mariah J. Talbott and Christopher S. Guy, Montana Cooperative Fishery Research Unit, Montana State University, Bozeman, Montana 59717

Joel P. Van Eenennaam, Javier Linares-Casenave, and Serge I. Doroshov, Department of Animal Science, University of California, Davis, California 95616

Molly A.H. Webb, Bozeman Fish Technology Center, 4050 Bridger Canyon Road, Bozeman, Montana 59715

In order to improve quality and yield of caviar in farmed white sturgeon (*Acipenser transmontanus*), it is essential to correctly assess stage of ovarian maturity and avoid harvesting females with atretic ovarian follicles. To detect atresia by changes in blood plasma parameters, individual females ($N = 11$) in the late phase of oogenesis were repeatedly bled and their ovaries biopsied before and after onset of ovarian atresia. Follicular atresia was induced by transferring females at Sterling Caviar, LLC, California from cold (10–13 °C) to warm water (20 °C). Follicle diameter increased and oocyte polarization indices decreased over time. Plasma testosterone and estradiol concentrations in fish with normal follicles were higher, compared to fish exhibiting early histological signs of follicular atresia, such as structural changes in the egg coat. Total plasma protein and calcium concentrations did not differ between fish with normal and regressing ovaries. In the future, our study may benefit sturgeon conservation propagation programs in Montana by improving techniques for detection of ovarian atresia in the late phase of oogenesis.