1027-92-176 **Azmy S. Ackleh***, Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504, **Youssef M. Dib**, Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504, and **Sophia R.-J. Jang**, Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504. *Continuous Versus Seasonal Reproduction in Discrete Stage-Structured Population Models.*

A discrete two-stage model which describes the dynamics of a population where juveniles and adults compete for different resources is developed. First, continuous breeding is assumed and the global asymptotic stability of the interior equilibrium is proved when the inherent net reproductive number is greater than one. Then a seasonal breeding described by a periodic birth rate with period 2 is assumed and the globally asymptotic stability of the two-period solution is proved when the inherent net reproductive number is greater than one. Finally, the advantage of having seasonal breeding is studied by comparing the average of the juvenile and adult numbers of the periodic solution for the nonautonomous model to the equilibrium solution of the autonomous model. Our results indicate that for high birth rates the equilibrium of the autonomous model is higher than the average of the two cycle solution. Therefore, seasonal breeding appears to be deleterious to populations with high birth rates. However, for low birth rates seasonal breeding can be beneficial. The two-stage model is then extended to a three-stage model where adults are divided between breeders and nonbreeders. Preliminary results concerning the long time behavior of the three-stage model are presented. (Received February 26, 2007)