

Abstract.—To optimize the essential amino acid (EAA) profile for mature striped bass *Morone saxatilis*, diets with graded levels of three essential amino acids—lysine (Lys), threonine (Thr), and total sulfur amino acids (Tsa) methionine and cysteine—were fed to 4-year-old striped bass females. The relative concentrations of these EAAs were maintained in ratios similar to those determined from the analysis of striped bass skeletal muscle, (i.e., 2.2:1.1:1.0 [Lys:Thr:Tsa]). All other dietary EAAs were maintained above the requirement levels published for juvenile striped bass. Three diets with graded levels of Lys, Thr, and Tsa were fed to mature female striped bass for 11 weeks. Statistical analysis of weight gain, specific growth weight (percent per day), and feed conversion ratio (weight of feed fed/weight gained) indicated significant differences ($\alpha = 0.05$) among treatments. However, there were no significant differences in whole-body proximate composition, egg size, or gonadosomatic index among fish fed the three dietary treatments. The results of this experiment suggest that the dietary amino acid profile required for optimal growth and feed efficiency in mature female striped bass is similar to the requirement profile for juvenile striped bass.