

Abstract

In fall 1977, matched numbers of Assinica and hybrid brook trout (Assinica male X domestic female) were planted in five lakes and a flowage each at the rate of 125 fingerlings per hectare. At the outset Assinica trout had an average length of 96 mm and a standing crop of 1.27 kg/ha compared to 86 mm and 0.94 kg/ha for hybrid trout. These populations were monitored 5 years (1977-1982) during which time some were prematurely terminated or reduced by natural (winterkill) or unnatural (poaching) causes. There were no significant differences in average annual survival rates of Assinica and hybrid trout in these waters. Maximum longevity of the two strains was judged to be age VII.

Growth and production were influenced by the inherent productivity of the receiving water and the status of the biota at the time of planting. Average annual growth in length of the two strains was similar. Rapid growth generally occurred in the first year following stocking and thereafter diminished. The margin in length and standing crop of Assinica over hybrid trout at the outset was maintained over the 5 years.

Production of Assinica and hybrid trout were comparable. Generally both strains achieved maximum production in the first year after which it decreased. For the most productive water annual production of Assinica and hybrid trout varied from 22.83 and 19.72 kg/ha, respectively, in the first year to 7.72 and 7.95 kg/ha in the fifth year. Similarly, for the least productive water annual production of Assinica and hybrid trout ranged between 11.27 and 8.07 kg/ha, respectively, in the first year and 1.75 and 0.72 kg/ha in the fifth year.

There was no evidence to support heterosis in survival and growth. However, both Assinica and interstrain hybrid brook trout were attractive alternatives to most present brood stocks of brook trout.