ABSTRACT

This study concerning the growth, cocoon production, silk production and adult moth properties of Bombyx mori L. was conducted under the natural climatic room conditions of La Trinidad, Benguet from November 1989 to January 1990. The performance of pureline and hybrid strains was compared in terms of the following: larval weight during the third, fourth, fifth and eighth day post-fifth stadia; duration of larval development; larval mortality; cocoon recovery; cocoon quality in terms of cocoon compactness; weight of cocoon shell and cocoon shell ratio; weight, length and diameter of cocoon; length of cocoon filament; percent reelability; percent raw silk and fineness of cocoon filament; and adult moth properties in terms of moth emergence, moth sex ratio, female moth body weight, fecundity and hatching ratio of fertilized eggs. The twelve silkworm strains utilized were six purelines (LAT 1, LAT 21, LAT 61, B200, B221 and IB1C), three hybrids (LAT 1 x B200, LAT 21 x B221 and LAT 61 x IB1C) and three reciprocal hybrids (B200 x LAT 1, B221 x LAT 21 and IB1C x LAT 61). The mulberry plant used was the A variety. Results indicated that the local climatic room factors of temperature and humidity in La Trinidad, Benguet greatly favored the rearing of the hybrid and re-

ciprocal hybrid strains. Among the six hybrid strains, $S_9$ (LAT 61 x IB1C) had heavy larval weights, short duration of larval development, low percent larval mortality, high percent cocoon recovery, lowest percent of bad cocoons, most compact cocoons, heavy and high percent cocoon shell, heavy cocoon weight, longest cocoons, long cocoon filament length, high percent reelability, high percent raw silk, largest size of cocoon filament, high fecundity and high hatching ratio of fertilized eggs. Similarly, evaluation of the cocoon quality of $S_{12}$ (IB1C x LAT 61) was comparable with the cocoon attributes of $S_9$. In view of these findings, $S_9$ and $S_{12}$ varieties of B. mori L. could be recommended as the strains best adapted for cocoon and silk production under the natural climatic room conditions of temperature and humidity at La Trinidad, Benguet. Due to the poor yield of quality cocoons, pureline strains $S_4$ (B200) and $S_5$ (B221) proved to be the least ideal strains for propagation at La Trinidad. The filature properties in terms of cocoon shell ratio (class B, C), cocoon filament length (600-1,000 m for purelines and 800-1,500 m for hybrids), percent reelability (40-90%), percent raw silk (65-75% of cocoon shell weight) and fineness of cocoon filament (1.3-2.2 denier) obtained from the experimental samples were within the international

standards set for evaluating cocoon and raw silk qualities. The valuability of the other utilized strains which did not respond favorably under the actual room conditions prevailing in La Trinidad should not be underestimated since they might yield different results when grown/cultured under controlled/optimal states of temperature and humidity and when fed with other mulberry plant varieties.