Biological, productive and genetic evaluation of *Bombyx mori* L. strains that belong to the Universidade Estadual de Maringá silkworm germplasm bank

Bespalhuk, R.; Pereira, N.C.; Munhoz, R.E.F.; Saez, C.R.N.; Fassina, V.A.; Bignotto, T.S. and Fernandez, M.A.

Department of Cell Biology and Genetics, Universidade Estadual de Maringá, UEM, PR, Brazil

This work aimed to characterize fourteen *Bombyx mori* strains, from Chinese (AS3, AS31, C75, C36, C37) and Japanese (E8, F6, JK, M8, M11-2, M18, M11, B82, B106) origin, of the Universidade Estadual de Maringá (UEM) germplasm bank, in order to support the silkworm's breeding program. All the strains were evaluated for the qualitative and quantitative characteristics that are directly or indirectly related to productivity. We also analyzed DNA molecular markers of RAPD (Random Amplified Polymorphic DNA) type, in order to detect the presence of specific markers for resistance / susceptibility to Nucleopolyhedrovirus multiple subgroup, BmMNPV. This virus is the most responsible for production loss, representing a serious problem for the sericulture in the state of Paraná. The results showed that the Chinese strain C37 stood out in productive and genetic aspects, presenting the best performance in a general set of features, including low mortality. Therefore, it will constitute the elite germplasm in the breeding program of UEM. The genetic characterization was made based in RAPD markers, using the primers OPA-18 and OPW-11, and allowed the estimation of genetic distance of Nei (1978). The lowest genetic distance observed was 0.500 between the races C36 and M8, while the highest value, 0.9048, occurred between M11-2 and B106. The dendrogram was constructed based on RAPD markers, the strains were grouped according to their geographical origin, with the only exception of B82, previously considered Japanese. The DNA band of approximately 400bp of the primer OPW-11 is related to susceptibility to the virus BmMNPV, and it was identified in all Japanese breeds, being an indication that these breeds are susceptible to BmNPV.

Word Keys: *Bombyx mori*, germplasm bank, BmMNPV, RAPD, sericulture.

Supported by: CNPq, CAPES, Fundação Araucária and Secretaria de Estado da Ciência, Tecnologia e Ensino Superior - Unidade Gestora do Fundo Paraná, UGF.