Sericologia 57(4): 212-223, 2017
ISSN 0250-3980

Research Paper

EVALUATION OF PROXIMATE NUTRIENT AND MINERAL COMPOSITIONS OF CASTOR LEAVES AND THEIR RELATIONSHIP WITH ERI SILKWORM (*SAMIA CYNTHIA RICINI* B.) TRAITS

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ABSTRACT

Host plant nutrition is the one major factor which affect development and productivity of silkworms. The present study was undertaken to evaluate thirty-two castor plant accessions for their proximate nutrient composition and relationship with silkworm traits at Eladale Research Station of Jimma University College of Agriculture and Veterinary Medicine, South West Ethiopia. The silkworm feeding experiment was laid out in CRD with two replications. Among castor accessions tested, Acc219662/1 stood high for nitrogen (3.898 %) and protein (24.421 %) content while, high phosphorus (1.997 %) and fat (1.262 %) were detected in Acc200361. The highest carbohydrate (52.149 %) content was associated with Acc200355 whereas, Acc219665 was rich in moisture (83.135 %). Besides, in terms of silkworm rearing performance, Acc 200361 delivered shorter larval duration (17.5 days), higher larval weight (7.6 g) and higher fecundity (351) while higher hatchability (96.75 %) was recorded in respect of Acc201067. In addition, eri worms fed on leaves of Acc200361 were found to be superior in terms of cocoon weight (3.55 g), shell weight (0.509 g), shell percentage (14.33) and ERR (98.6 %). Moreover, high ash (22.9 %) and fiber (24 %) content were recorded from Acc219647. Furthermore, significant and positive correlation was observed between eri-silkworm traits and nitrogen, protein, moisture, phosphorus, fat and carbohydrate content of the leaves. On the other hand, negative association was observed with ash and fiber content of the leaves except for larval duration and survival rate.

Key words: Bio-chemical composition, correlation, eri silkworms, rearing performance.