

Nutrient Status Of Leaves Of Some Castor Genotypes In Eastern Dry Zone Of Karnataka

D. Chandrappa*, R. Govindan and B. Sannappa¹

Sericulture College, University of Agricultural Sciences, Chintamani - 563 125.

ABSTRACT

Ten castor genotypes were raised under rainfed condition for sericulture-cum-castor seed production. The composite leaf samples of ten castor genotypes harvested after 90 days of sowing were used for analysis of nutrients viz., nitrogen, phosphorus, potassium, calcium, magnesium and sulphur. Significant differences in the mineral constituents were recorded in different genotypes. Nitrogen, phosphorus, potassium, calcium and sulphur contents were higher with Local genotype (5.637, 0.415, 4.047, 6.830 and 0.496%) and magnesium content was more with DCS-84 genotype (2.240%). On the other hand, GCH-4 recorded lower nitrogen (2.080%), calcium (2.943%) and magnesium (1.380%). DCH-177 had less phosphorus and sulphur (0.114 and 0.113%). Potassium was least with JI-226 (1.837%). The analysis of macro and micronutrients of selected castor genotypes was done to know whether they have any bearing on the rearing performance of eri silkworm and to select the best suitable castor genotype for sericulture-cum-castor seed production.

Key words : Castor genotypes, Eri silkworm, Leaves, Elemental composition

INTRODUCTION

The eri silkworm is one of the sericigenous insects exploited commercially for its valuable silk. The worms have varied degree of acceptability of hosts and their utilization to convert into body matter. The quality of leaves provided to the worms for feeding has been considered as the prime factor governing the production of good cocoon crop. Better the quality of leaves, greater would be the possibilities of getting good cocoon harvest (Ravikumar, 1988). It has been well recognized that both chemical composition and nutritive value of the castor leaves differed considerably from genotype to genotype, season to season and growth phase of the crop. It has been observed that the growth, development and cocoon crop of eri silkworm are influenced by the castor genotype and quality of leaves fed to the worms. Nutritional status of leaves has been implicated as a major factor in the survival of non-mulberry silkworms (Pandey, 1995). Since, the nutrition has been known to influence the growth as well as cocoon traits, it is necessary that certain care needs to be taken in selection of castor genotypes leaves to be fed to the worms to put up healthy growth and in turn to obtain better cocoon yield. The selection of castor genotype is an important criterion for better growth and development of eri silkworm for higher productivity in terms

of cocoon and egg production.

MATERIALS AND METHODS

An experiment was conducted using ten castor (*Ricinus communis* L.) genotypes viz., DCS-84, DCS-85, JI-226, DCH-171, GCH-4, DCH-32, DCH-177, DCS-9, 48-1 and Green non-powdery Local were sown during 2001 and 2002 with spacing of 0.9m x 0.45 m with a plot size of 5.4 x 4.5 m and the crop was raised at Sericulture College campus, Chintamani as per the recommended package of practices (Anon., 2000) under rainfed condition. The soil was analyzed for chemical composition following Jackson (1973). The pH of soil was 6.63, electrical conductivity was 0.32 dms/cm² and organic carbon, nitrogen, phosphorus and potassium contents were 0.55 per cent, 279.75 kg/ha, 22.13 kg/ha and 201.55 kg/ha, respectively. The experiment was laid out in a randomized complete block design with three replications.

The leaf samples at three different heights of the plant viz., top, middle and bottom were collected in paper bags at 90 days after sowing and composite leaf samples were made. Leaves were shade dried for three days and then dried in hot air oven at 70°C until constant weight was obtained. The dried leaf samples were ground into fine powder and preserved in butter paper bags for chemical analysis. Each sample had three replications. The mineral

¹ DOS in Sericultural Science, University of Mysore, Mysore - 570006.

*Author for correspondence