

FERTILIZER AND MULBERRY VARIETY EFFECTS ON THE YIELD AND QUALITY OF SILK

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Abstract

Horticulture in Kenya has contributed significantly to the foreign exchange earnings as well as enhanced small scale farmer earnings and food security. Research on relationships between variety and fertilizer requirements will go along way in assisting farmers' choice of appropriate high yielding varieties and soil fertility management. The objective of the study was to determine the effect of soil fertility and mulberry variety on cocoon and silk quality. An experiment was conducted during the short rains of 2004/2005 and long rains of 2005, at Kasarani and Thika using three mulberry varieties (Kanva, Noi (Thailand) and Embu (local variety) commonly grown by farmers in silkworm rearing. The study compared the growth and yield of three mulberry varieties. It further compared silk production using three varieties and their quality response to inorganic fertilizer (NPK) and manure treatments. The treatments applied were, nitrogen, phosphorus and potassium (50gm NPK) alone, 25gm NPK + 1kg manure, 2kg manure alone, and control (no manure and no fertilizer). Mulberry growth measurements taken were height of shoots, number of shoots, and number of leaves per shoot. Leaf analysis was performed to compare leaf quality in terms of crude protein and crude fibre from different varieties and treatments. Groups of fifty silk worms were reared with leaf harvests from the different treatments. After spinning semi wet cocoon weight, dry weight, shell weight, and pupa weight were taken. Silk quality was based on cocoon weight, shell weight, length and weight of silk filament. The results showed that there were significant effects of fertilizers and mulberry variety on mulberry growth performance, silkworm larva performance and consequently on cocoon weight and filament length. Leaf growth, biomass, crude protein, silk quality was significantly influenced by fertilizer application.

Keywords: Mulberry variety, shoots, fertilizer and silk quality