

Effect of Different Combinations of Biofertilizer (*Azotobacter* and *Phosphobacter*) with Organic Manure (MOC) and Inorganic Fertilizers (UREA and SSP) on Growth and Yield Parameters of Betelvine CV. Simurali Bhabna

B. Dutta*¹, A. Bandyopadhyay² and S. Mondal³

^{1,2}Department of Plantation Crops and Processing, Faculty of Horticulture,
Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar, West Bengal

³Department of Ag. Extension, Faculty of Agriculture, Uttar Banga Krishi Viswavidyalaya,
Pundibari, Cooch Behar, West Bengal
E-mail: ¹babli.here@gmail.com

Abstract—The present experiment was carried out in two consecutive years of 2012-13 and 2013-14 at experimental site of AICRP on MAP and Betelvine, Bidhan Chandra Krishi Viswavidyalaya, Kalyani, Nadia, West Bengal. The design of the experiment was Randomized Block Design with 9 treatments comprising of different combinations of organic (*Azotobacter*, *Phosphobacter* and Mustard oil cake) and inorganic (Urea and SSP) sources of nutrients. Each treatment was replicated thrice. Significant variations were recorded among all treatment combinations in respect of growth and yield parameters of betelvine. Maximum vine elongation, basal girth, leaf size, leaf yield and other yield attributing characters was found significantly better in the treatment with *Azotobacter* @ 10 kg + 140 kg N (MOC) + *Phosphobacter* @ 5 kg + 50 kg P₂O₅ + 100 kg K₂O ha⁻¹year⁻¹. Though the treatment was statistically at par with *Azotobacter* @ 5 kg + 170 kg N (MOC) + *Phosphobacter* @ 5 kg + 50 kg P₂O₅ + 100 kg K₂O ha⁻¹year⁻¹ in respect of dry matter production. Maximum disease incidence (leaf spot and leaf rot) was observed in treatment combinations of 200 kg N (MOC+Urea 1:1) + 100 kg P₂O₅ + 100 kg K₂O ha⁻¹ year⁻¹ (RDF), whereas minimum disease incidence was noticed in the vines treated with *Phosphobacter* 5 kg + 50 kg P₂O₅ + 200 kg N (MOC) + 100 kg K₂O ha⁻¹year⁻¹. Storage life (days to 50% rotting) of betel leaves was observed highest in the treatment combination of *Phosphobacter* @ 5 kg + 50 kg P₂O₅ + 200 kg N (MOC) + 100 kg K₂O ha⁻¹year⁻¹.

Keywords: Betelvine, organic, *Azotobacter*, *Phosphobacter*, Biofertilizer.