Commercial Production via Biofertilizer Management and Microorganism Using

Tran Minh Hien, Tran Thi Kim Cuc, Mai Thanh Truc, Ngo Thi Bich Ngoc and Do Trung Binh

Farmers have adopted the strategy of increasing crop yields by applying large amounts of chemical fertilizers and pesticides. At present, however, the negative effects of chemical overuse, in terms of environment, and quality deterioration are becoming apparent. Organic wastes are utilized in agriculture commonly to improve soil fertility and better crop production. Using effective microorganism for inoculants biofertilizers have been encouraged to develop sustainable agriculture in Vietnam. We are exploiting two strains of nitrogen fixation bacteria (Azotobacter sp.), three strains of phosphorus solubilization microbe (Bacillus sp., Candida sp., Klebsiella sp.) and five strains of cellulose degradation micro-organisms. (one bacteria, two actinomycete, two fungi i.e. Trichoderma sp. and Aspergillus sp.); and 04 antimicrobial resistance in fungi (Phytophthora spp., Fusarium spp. and Sclerotium spp.) included: 02 Bacillus sp. (HB5 and HB7) and Trichoderma sp. A combination of 3 or 5% inoculants (nitrogen fixation bacteria, phosphorus solubilization microbe) and treated organic waste with 1:10 ratios was the best treatment to produce organic bio-fertilizer. Five the best treatments selected for sterile carrier-based inoculants containing effective microorganism were recommended. Six protocols of product processing were proposed as: nitrogen fixing microbial fertilizer; phosphate solubilizing microbial fertilizer; cellulose degrading microbial fertilizer; Bacillus sp. inoculant against fungi; Trichoderma sp. inoculant against fungi and multistrain inoculants biofertilizer.