

## PAECILOMYCES LILACINUS PLA & PLB

### TECHNOLOGY DESCRIPTION

This technology is a method using existing soil bacteria known as *Paecilomyces lilacinus* (PL) to control the infestation of root-knot nematodes (RKN) in the black pepper crop.

### TECHNOLOGY FEATURES

Application of a biological control in the pepper cultivation will prevent any residues of chemical nematicides in the farm products, soil and water system. High colonization rate of almost > 90-95 % was observed on the root-knot nematode eggs. Inhibition towards the eggs hatching is up to 80 % compared to usage of chemical nematicides such as Fenamiphos. Utilization of the PLA and PLB as a biological control in the field is inexpensive compared to the conventional method. The PL is natural component of soil and can multiply itself to spread without harming the farmers, animals or plants in the field.

### ADVANTAGES

- Cheaper than the current available nematicides
- Natural soil inhibiting microbes with no environmental impact
- Live control agent that sustains itself through multiplication

### INDUSTRY OVERVIEW

#### Prospect: Pepper Industry

Malaysia Pepper Industry Bulletin Jan-Jun 2010 quoted black pepper (*Piper nigrum* L.) as an important cash crops of Sarawak, with 6,125 tonnes of black pepper exported from January to June 2010, valued at RM77.889 million. Moreover, the International Pepper Community (IPC) stated that until 2011, Malaysia was the fifth largest pepper producer in the world while Vietnam was the largest pepper producer (100,000 metric tonnes) followed by India (48,000 metric tonnes), Indonesia (37,000 metric tonnes), Brazil (35,000 metric tonnes), Malaysia (25,672 metric tonnes), Republic of China (23,300 metric tonnes), and other countries. Pepper is also mainly grown in the remote areas of Sarawak mostly by the rural poor smallholders. Therefore, pepper is considered as an important source of income for about 73,000 families in Sarawak with the farm size ranging from 0.1 to 0.4 ha.

The presence of root-knot nematodes (RKN) in black pepper farms is a major challenge. The inexpensive PLA and PLB demonstrate the high colonization rates (>90%) on female RKN, and colonization rates on RKN egg masses as high as 90-95%. In addition, the product inhibit RKN egg hatching up to 88%.



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