

Abstract

Tropical armyworm (TAW) is one of the most devastating pests that attack stored sweet potatoes (kumara) in Northland's kumara growing region. Current methods of control include the use of organophosphate (OP) smoke formulations which are hazardous to apply. Moreover, pests are rapidly developing resistance front overuse of OPs. The Northern Wairua Vegetable Growers Association, BOC and Crop & Food Research carried out a joint project to register Permigas[®], an aerosol formulation containing synthetic and natural pyrethrins, as an alternative safe method for the control of TAW. Preliminary investigation showed that a 2 g/m³ application of Permigas[®] could kill TAW. Further confirmatory trials were carried out in grower sheds in Dargaville. Permigas[®] was applied in the storage sheds using a handgun at the recommended rate, assisted with a circulation fan. A single application of Permigas[®] resulted in 95% mortality of TAW under commercial storage conditions. A further 3 applications were made at 10-days intervals. Under this regime, permethrin residues were found to be below the permitted levels of 1 mg/kg. Permigas[®] is now registered for use on stored kumara with 98% of the growers using this product to control potential TAW invasion during each season.