

A survey on the pod crinkle disease of vegetable soybean plantation at Son Jum Pa village, Amphur Mae Sruay, Chiang Rai province revealed that there were more than 80% diseased plants. Typical symptoms of diseased plants were crinkle leaf, yellow vein, dark green leaf and crinkle pod. Polymerase chain reaction (PCR) technique was employed to detect a virus pathogen which was the causal agent of the disease. The specific primers used were TV1 and TV2 for Soybean crinkle leaf virus (SCLV) and Carla-Uni, CN45, CN47 and CN55 for *Cowpea mild mottle virus* (CPMMV). SCLV DNA was found on all leaf samples of the diseased plants, but only four leaf samples had CPMMV RNA. The size of SCLV DNA on 0.8% agarose gel analysis was 770 bp and CPMMV RNA was 120 bp on 1 % agarose gel. When the diseased leaf was observed under transmission electron microscope the particles of rod shaped virus with 700 nm in length were seen. Eight hundred seeds collected from the infected plants were planted for testing seed transmission of the virus. PCR technique was also performed to check DNA and RNA of the virus in the seedlings, No disease symptom and neither of DNA or RNA of virus was found in the seedlings. A test on index hosts, the virus could be mechanically transmitted onto

soybean, globeamaranth and mungbean showing mosaic or vein clearing, mosaic and chlorotic blotch symptoms respectively. Only RNA of CPMMV was determined on those three plants. The virus could not be mechanically transmitted onto tobacco, petunia and zinnia. For insect transmission tested, whitefly could transmit the virus from crinkle pod of soybean to tobacco and from disease tobacco back to healthy soybean. The inoculated tobacco plants had severe crinkle leaf symptom. No symptom developed on soybean after inoculation with CPMMV by whitefly from mosaic mungbean. Symptom development at various stages of plant was studied by placing soybean seedlings at 6, 12, 18, 24, 30 and 36 days old in the heavily infected field for 48 hours. The plant naturally inoculated at 36 days old produced only 60% of crinkle pod while 100% was obtained from younger seedlings inoculation. Six insecticides were tested against whitefly, the insect vector. The most effective chemicals against the insect were cyhalothrin and triazophos. Moderately effective chemicals were buprofezin, acetamiprid and methanmidaphos while methomyl had no effect on hatching of the insect.