

ชื่อเรื่อง

**Vetiver Hedgerows and Agrochemical Residues : a Case Study in the  
Cabbage Fields at Nong Hoi Development Center Chiang Mai, Northern,  
THAILAND**

ชื่อผู้วิจัย

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**Abstract**

The main objectives are to investigate the fate of agrochemicals used for growing cabbage in between the vetiver hedgerows (VHRs) and to evaluate the effectiveness of hedges in reducing the over supply amount of pesticides and nitrate fertilizer. The experiment has been conducted in the area of 15x72 squaremeters on 60 per cent slope. Split-plot in randomized complete block is assigned with three replications (blocks). Each block consists of six plots with and without VHRs at 3 and 6 meter vertical intervals and also agrochemicals at zero, one and double doses were applied. Seedlings were transplanted on July 13, and harvested in September 29. Random samplings were later taken from the lowest VHRs of the three whole plants at each plot; and from soils to one meter depth in between and at one meter behind the lowest VHRs. Included were sediments from the collection tanks below. From the analytical data, the three pesticides were taken up into vetiver grass at different rate and contents. Those applied were in soil cooperated as Carbofuran insecticides. Alachlor herbicides sprayed 7 days after planting cabbages and Monocrotophos spraying twice at 34 and 42 day during the growing stage. Carbofuran was found in vetiver grass about 0.001-0.006 per cent; Alachlor 0.01-0.08, and Monocrotophos 0.19-0.53 per cent of the total fresh weight. In soils, the only Alachlor has been detected around 3.38 to 7.69 per cent. It is believed that over 90 per cent of Carbofuran and Monocrotophos had decomposed and could have not been detected by the method employed Probably, the same decomposition happened for Alachlor after spray to harvesting when the cabbage was about 78 days old. Alachlor and Monocrotophos were found

both below and over Maximum Residue Limit, i.e. >0.02 and 0.20 ppm respectively Carbofuran at normal and double close was lower according to FAO/WHO CODEX (<0.5 ppm). Losses of soil through VHRs of 5 months old found at the moderate rate of 22.4 ton per hectare. There was only Alachlor found in sediments about 0.02-0.5 per cent. The influence of nitrate fertilizer could not be possible as to have been detected by this period. A conclusion can be made at this stage that VHRs have substantially contributed to a process of capturing over supplying of agrochemicals as the living walls. As a result detoxification should have been possible and the better downstream water quality. This study is a preliminary one, thus it still needs further detailed investigation.