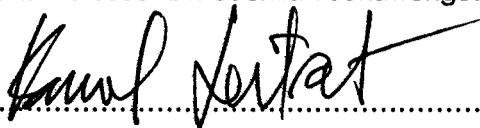


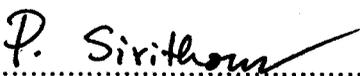
THESIS TITLE : IDENTIFICATION AND SELECTION OF TOMATO HYBRIDS
RESISTANT TO BACTERIAL WILT (*Ralstonia solanacearum*)

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ABSTRACT

These studies were conducted in order to identify and select tomato varieties resistant to bacterial wilt disease (*Ralstonia solanacearum* syn. *Pseudomonas solanacearum* E.F. Smith.) Firstly, 35 resistant varieties, and two susceptible varieties were assessed their yield performances under cool and dry season. Thereafter, they were planted under the natural infested field and in the artificially infested soil in the cement block under rainy season for determining their resistance or susceptibility to bacterial wilt. In general, most of tomato varieties under winter season gave relatively higher yield than those under rainy season. BRS-1 gave the highest yield, but it was not significantly different from Hawaii7998, Hawaii7997, TBL-4, TML114-48-5, TML46-N-12-N-early NT, VF134-1-2 and CLN-17-0. Under rainy season, percentage of infected plant under the field condition was not as uniform as under the cement block. Besides, 37 tomato varieties were categorized DNA fingerprint detection by RFLP technique and

were clarified into three groups base on their genetic profiles, i.e. A, B and C. In addition, group C could be sub-classified into C1, C2 and C3. From yield performance, percentage of infected plant and DNA fingerprint detection, three resistant varieties (Hawaii7998, MT-II, and TML46-N-12-N-early NT) and a commercial susceptible variety (VF134-1-2) were selected as parents material for F_1 , F_2 and backcross generations. In the next winter season, F_1 (HW98xVF134) gave the high yield, low percentage of infected plants and high heterosis percentage. The other hybrids gave the relatively lower yield and infected plant percentage inbetween their parents, however there were not statistically significant difference from each hybrid. Thereafter, F_1 , F_2 and backcross generations were compared to their parents under rainy season. The results showed that almost of the hybrids gave higher yield than their parents. The infected plant percentage under cement block was quite higher and more uniform than those under field condition. Yield of the backcross generation was contradicted to their percentage of infected plant. Decrease of infected plants percentage coincided with the decrease of yield in the plant of backcross to resistant varieties. Conversely, increase of infected plants percentage coincided with increase of yield in the backcross to susceptible variety.

DNA fingerprint detection was clarified the genetic base of tomato varieties used, and also valuable in purity test of F_1 hybrids, however, in this study it could not detect resistant tomato varieties.