

**Thesis Title** Combining Ability Test of Baby Corn Lines Extracted from Suwan 2 Cultivar.

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## Abstract

The objectives of this experiment were to: (1) identify the inbred lines of baby corn that produce high yielding  $F_1$  hybrids when crossed with inbred testers; and (2) investigate combining ability of the inbred lines. The twenty-two inbred lines were used in this experiment and were extracted from Suwan 2. During the rainy season of 1996, each inbred lines was crossed to two inbred testers (CMB 8704 NO 19  $S_3\#$ , and NO 26  $S_3\#$ ) to produced 44  $F_1$ -hybrids at Field Crops Research Center in Chiang mai. These  $F_1$ -hybrids were later on evaluated for standard ear-weight and combining ability with five commercial varieties (2 check hybrids and 3 coordination hybrids) in double lattice design experiment. Two-row plots by 6 m., spaced 75 cm. apart were employed to plant 2 plants per hill spaced 25 cm. and replicated two times.

Results obtained from this experiment showed that only few individual crosses yielded significantly better than the check hybrids and coordination hybrids. Stem height, ear height, maturity, and resistance to both root and stem lodging were not much different in crosses compared to the check hybrids and coordination hybrids. Crosses with CMB 8704 NO 19  $S_3\#$

seemed to be more promising than crosses with CMB 8704 NO 26 S<sub>3</sub>#. Both sets of testcrosses did not yield significantly different from the check hybrids and coordination hybrids. Crosses that yielded significantly better than the check hybrids and coordination hybrids are SW94L-210-212-1 X Tester #26 , and SW94L-210-454-2 X Tester #19 which yielded 327.5 Kg/rai, and 325.2 Kg/rai respectively. These figures are 49.8 percent and 48.5 percent, respectively, higher than the check hybrids and coordination hybrids.

Results obtained from investigation on combining ability of these inbreds based on weight with husk, without husk, and of standard ears indicated that SW94L-209-14-2, SW94L-210-212-1 and SW94L-210-212-2 were the lines that had higher general combining ability than the others. The crosses between SW94L-210-454-2 X Tester #19 and SW94L-210-212-1 X Tester #26 showed highest specific combining ability on those three characters. Studies on correlation between some characters in these crosses showed in general positive correlation. Correlation value for weight with husk with weight without husk, and standard ear-weight were 0.67 and 0.62, respectively. It was interesting finding quite high correlation between weight without husk and standard ear-weight indicated by the correlation value of 0.82.