

# Effect of Spray Application at Different Stages of Rice on the Brown Planthopper Populations and Rice Yield

by

Ta-Shiu Liu and Der-Chien Chang

## Summary

The present work involved the investigation of proper timing and frequency of spray application of insecticides, based on the nymphal stages of each generation of brown planthoppers after invasion to the rice field. The fluctuation of the population of this pest was also monitored after spray so as to find the time and number of spray application to ensure the most effective and economical control of brown planthoppers in the field.

The results showed that for earlier treatment, the population of brown planthoppers, though rising slower than that of control, showed a rapid surge toward the end of the cropping season.

For the 2nd crop of rice, single cover spray at booting stage brought the highest yield. The yield of rice decreased with single treatment at heading stage, dough stage and the end of tillering stage, in that order. Three timed sprays gave the highest net production value, and the most proper spray schedule was 3 consecutive sprays at the end of tillering stage, booting stage and heading stage. In conclusion, for brown planthopper control of the 2nd rice crop, 3 spray applications beginning at the end of the tillering stage (40 days after transplanting) could reduce the damage to the minimum. In terms of generation pattern, treatment at 2nd and 3rd nymphal stages of the 1st, 2nd and 3rd generations of brown planthoppers after invading the field was the most effective.