

區受到旱魃之影響，所施肥料至孕穗期才被吸收，此亦為增加發病原因。

紋枯病之發生，因水稻生育早中期，天氣乾旱未下雨，為此紋枯病之發生稀少，但至生育後期（抽穗一齊穗，5月中旬以後）連續下雨，較晚植之雲林、嘉義縣地帶發生最重，且其蔓延迅速，部份因水稻早期發生不多未留意防治，至後期措手不及，為此防治效果不大理想。

褐飛蝨之發生，因水稻生育中，天氣乾旱，氣溫高、雨量少，日照充足，有利虫口之繁殖，為此引起本年一期水稻褐飛蝨之普遍發生，可是台南縣因水稻插植較晚，該虫之發生亦略晚。嘉義縣靠山地區（梅山、竹崎、中埔、番路、嘉義市）因水稻缺水，生育不良，間接影響該虫之發生。

## 2 二期水稻發生之主要病虫害為紋枯病、白葉枯病、褐飛蝨、縱捲葉虫等。

紋枯病之發生：水稻生育初期（7月上旬）除嘉義縣靠山地區外雨量少，至7月下旬~8月上旬之間降雨量增多，8月下旬又受到颱風帶來雨水之影響，促成二期水稻紋枯病之發生，因此發生初期較平年為晚，發生盛期比平年早的現象，10月以後氣溫下降，無雨天氣乾燥，紋枯病停止蔓延。嘉義縣竹崎、梅山、中埔、番路、嘉義市等地，因雨量充足，紋枯病之發生嚴重，其防治亦困難。台南縣二期水稻之插植比往年為晚，紋枯病之發生亦受到影響。

白葉枯病之發生：於7月25日遭受賽洛瑪颱風，8月22日遭受愛美颱風之侵害，引發白葉枯病之加劇發生。近年來感病品種（台南六號、台農育A六號、非洲種等）栽培面積之增加，白葉枯病之發生亦隨而增加。

褐飛蝨之發生：在一期水稻褐飛蝨之發生普遍，密度亦高，因而二期水稻該虫之為害可能嚴重，可是7月下旬（水稻生育初期）遇到豪雨，水稻浸水，8月下旬遭遇颱風，因而影響褐飛蝨棲群密度之增高。

縱捲葉虫之發生：各地均有，其中以靠山地區（中埔、新化小區）及三年輪作地區（北門小區）之發生較多，該虫之發生近年來漸次增加之勢。

## 參 考 文 獻

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### The Occurrence of Rice Diseases and Insect Pests in Tainan District During 1977

by

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### Summary

1. The major rice diseases and insect pests that occurred in Tainan District during 1977 were leaf blast, neck blast, sheath blight and brown plant-hopper in the

first crop season and bacterial leaf blight, sheath blight, brown plant-hopper grass leaf roller and infertile syndrome of rice in the second crop season.

2 The relationships between the occurrence of diseases and insect pests and climatic factors were :

- (1) Leaf blast : The infested acreage and injury percentage in the first crop season were 1953.3 ha. and 2.5% respectively and 431.8 ha. and 0.58% in the second crop. Owing to the less rainfall, longer daylight during February, March and April in 1977. The outbreak of leaf blast was later and less serious than that of the past years. This phenomenon may also be due to growing the resistant rice variety Tainan No.6 in some part of this area where rice blast was easily tended to occur.
- (2) Neck blast : The infested acreage and injury percentage were 1764.6 ha. and 10.6 % respectively in first crop and 574.4 ha. and 4.9 % in the second crop. Because of the more precipitation during May and June that was just in the blooming stage of rice, therefore the injury was more serious in some parts of this district.
- (3) Sheath blight : The infested acreage and injury percentage were 5327.7 ha. and 13.1 % and 974.6 ha. and 9.4 % in the first and the second crop season respectively. Owing to the warm climate and continuing to rain in the late growth stage in the first crop ( May, June ), the damage caused by this disease was serious especially in Yin-Lin and Chiayi areas where planting dates were late. In the second crop, there was less rain after October and the temperature was declined so the infestation of this disease was not serious.
- (4) Bacterial leaf blight : This disease did not occur in the first crop, but was heavily occurred in the second crop in 1977 compared with that of the past years. This was due to the two times of typhoon attack on rice and the increased acreage of cultivating disease susceptible varieties such as Tainung No.67, Tainan No.6 and "African variety" etc.
- (5) Brown plant-hopper : The infested acreage and damage were 1187.7 ha. and 1.1 % 16067 ha. and 9.5 in the first and the second crop season respectively. This insect pest is used to be more serious in the second crop than in the first crop. But it produced high population and so caused much damage in the first crop in 1977. This was due to the fact that there were dry weather, high temperature, short precipitation and the longer daylight during the growing period of the first crop in this year. In the second crop of this year, the population of this insect was low and it caused less damage that was due to the two times typhoon attack on rice in July and August.
- (6) Grass leaf roller : This was not an important economic insect pest in rice



crop, but its population seems to increase and become important in recent years. The infested acreage were 195 ha. and 6684.9 ha. in the first and the second crop respectively.

3. The results obtained from the light trap indicated that the major insects in 1977 were brown plant-hopper, green leaf-hopper, grass leaf roller, rice stem borer, and zigzag leaf-hopper etc. The population of these insects were highly influenced by the amount of precipitation; that is the population of insects is reduced sharply following the heavy rain. Brown plant-hopper first showed up in the middle of April and started to cause damage on rice in the late of April. The population of this insect was fluctuated owing to the rainfall during May and June. It reached the lowest point at the end of August due to the twice storms cause in July and August and then climbed up again from the early of September and reached the highest point at the early of November. Since it was just in the rice growing season during September and October and the climatic condition was favoured for the existence of this insect, most of this insects was short-winged type and seriously infested the rice plants and caused widely and much damage. Because of the senescence of rice plant in the late growth stage and the conditions were not favored for the survival of this insect, most of the the insects were the long-winged type and started to move away. It caused the population of this insect collected from the lamp trap increased rapidly. The appearance of grass leaf roller was started from the late of February but it did not caused much damage in first crop. The population of this insect was decreased in July and August due to the twice storms attack during this period and it climbed up in September and October and then caused serious injury.
4. The total acreage of rice in the first crop was about 65,000 ha. in Tainan District and the major varieties were Tainan No.5, Tainan No.6, Tainung No.67, Kaohsiung No.139, Taichung sen No.1, Africa variety etc. Tainan No.6 was the widest grown variety and its acreage had 28266 ha.(44.41%) Tainan No.5 with 23,513 ha.(36.94%) was the second. The acreage of rice in second crop was about 116,000 ha. and the major varieties grown were Tainan No.5, Tainan No.6, Tainung No.67, Nan-Kai-Yi No.121, Kaohswng sel No.1, Africa variety etc. Tainan No.5 with 56949 ha.(48.76%) was the leading variety and 28941 ha.(24.79%), 10367ha.(8.88%) and 4515 ha.(3.87%) for Tainan No.6, Tainung No.67 and Africa variety respectively.