Gathering of Data:

Start 35-40 days after seeding, count infected plants, Make observations on the adjacent plant one meter away from the assigned plants, and put that as a remark.

Damage assessment:

Seedling stage- they are infected through the roots or cut ends of the leaves that shows kresek symptoms (wilting of whole leaves 2 WAT):

= **nLow** - no kresek symptoms
Stem elongation to Maturity
Low – No infection occurs
Medium - drying of ¼ of the leaves
High – Drying of whole leaves
Yield Loss : ranges from 10- 30% in severe cases.

DISEASE MANAGEMENT

Cultural:

- ❏ Remove and burn disease stubbles and straws after harvest.
- ❏ Make sure that the piled disease straw has decomposed completely before transplanting.
- ❏ Use disease free seeds or seedlings
- ❏ Planting distance
- ❏ Avoid application of high rates of nitrogenous fertilizers

PLANTING OF RESISTANT VARIETIES

References:

1. Philippine German Crop Protection Program, *Integrated Pest Management for Rice.*
2. Philippine Rice Research Institute, 1999, *Lecture Manual on Integrated Pest Management for Rice Vegetable Cropping System.*
3. Reissig W. H., E.A. Heinrichs, J. A. Litsinger,K. Moody, L. Fiedler, T. W. Mew and A. A. Barrion 1986 : *Illustrated Guide to Integrated Pest Management in Rice in Tropical Asia.*
4. S. H Ou, 1985, *Rice Diseases (second Edition)* Commonwealth Mycological Institute.
5. Philippine-German Crop Protection Programme, 1980. *Manual on Surveillance and Early-warning Techniques for Plant Pest and Diseases*

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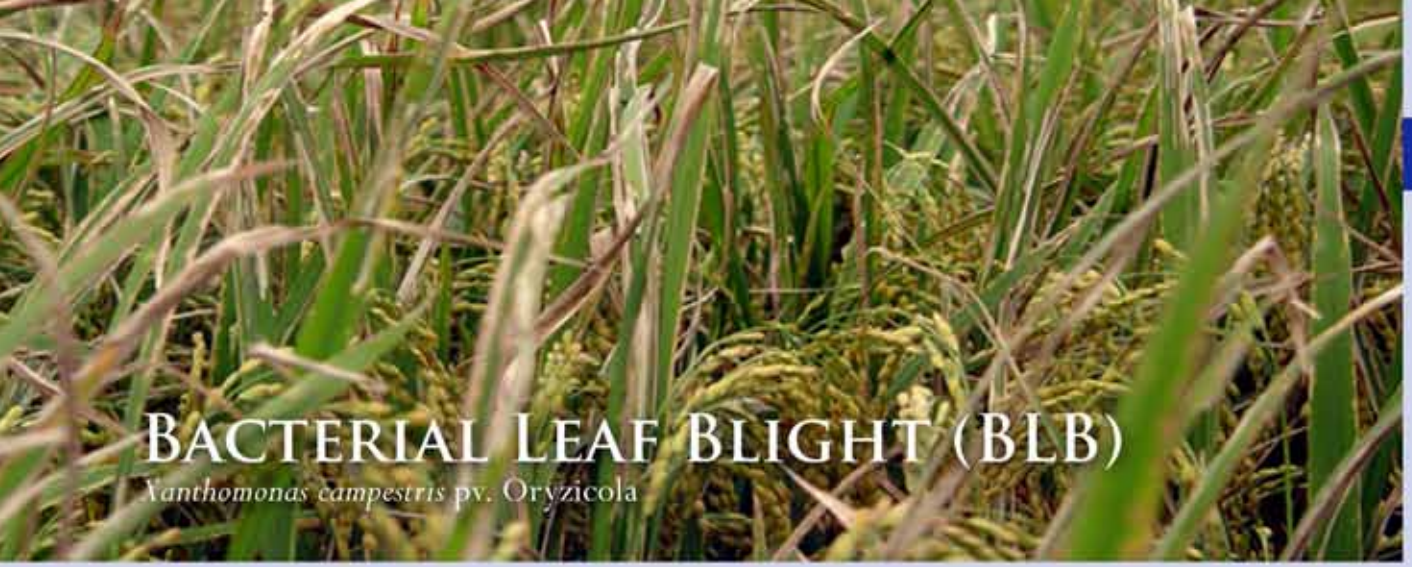
Disease of Rice

MANAGEMENT OF BACTERIAL LEAF BLIGHT

Department of Agriculture
BUREAU OF PLANT INDUSTRY
CROP PROTECTION DIVISION



BACTERIAL LEAF BLIGHT (BLB)

Xanthomonas campestris pv. Oryzicola

THE DISEASE OCCURS IN ALL COUNTRIES OF TROPICAL ASIA. The earlier the disease attacks during the growing period of the plant, the greater is the damage. Heavy losses occur when seedlings are infected (kresek type). It does not affect the number of spikelets when the disease occurs on mature plants.

SYMPTOMS OF THE RICE PLANT

Lesions usually start as water – soaked strips along the leaf blades. The lesion, on one or both leaf edges, enlarges and turns yellow within a few days. As the disease advances, the lesion covers the entire leaf turning it white or gray with the growth of saprophytic fungi. Leaves of infected plant or even entire plants becomes watery soaked, folded up, and rolled along the midrib at seedling stage. White to yellow lesions appear on leaves of mature plant (Leaf blight), milky or milky dewdrops may be observed in young lesions in the early morning. In severe cases, grains may be affected with spots.

Losses are rarely serious in soils of low fertility. But when high rates of fertilizer are applied, resistant varieties are the only economical means of controlling the disease. On more resistant cultivars or under certain conditions a yellow stripe appears just inside the margin of the leaf blade with no formations of necrotic symptoms for some time. The stripes may eventually turn yellow and necrotic. On susceptible cultivars, infected blades will wilt and roll as the diseased portion enlarges while the leaves are still green. The entire blade may soon be involved and may then dry up.

Susceptible Growth stages:

- Kresek is usually observed at seedling stage to stem elongation.
- Leaf blight appears at booting or heading stage to dough stage

DISEASE EPIDEMIOLOGY

The bacterium enters the plant through natural openings (stomata) at the edge of the leaf and through injuries in roots and leaves. It does not enter the plant through the stomata. As the young lesions develop, bacterial cells ooze from lesions whenever dew or rain occurs. Strong wind and rain speed the spread of the organism. Irrigation water also spread the pathogen from one field to the other. The pathogen attacks the vascular tissues causing wilt. The pathogen survives in the absence of rice plant by forming micro colonies in the rhizosphere of non- host grasses. It may infect some grass that serves as alternate host. Seed-borne bacterial cells are not important in the spread of the disease.

Monitoring Techniques and Methods:

Assign 5 randomly selected sample plants