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Blast and Brown Spot Diseases of Finger Millet and Its Management

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Finger millet is also known as African light grain, also known as ragi. Nagli is a cereal native to the Ethiopian highlands and was introduced to India about 4,000 years ago. It is well suited to high altitudes and is grown in the Himalayas up to an altitude of 2300 m. Its greatest virtue is that it can be stored for an exceptionally long time without spoiling and is therefore very important in times of drought. It is the most important light grain in the tropics (12% of global light grain area).

Blast: *Pyricularia grisea*

Blight disease is a major production constraint causing heavy yield losses. During 1976-85, a one percent increase in infection with the disease fungus *Magnoportha grisea* resulted in a corresponding increase in yield loss from 0.32 to 0.84%. Climatic conditions favorable for the development of the disease include temperature of 15-25^0 C, relative humidity of more than 85% with free overcast rain is responsible for the spread of the disease. Disease severity is influenced by various factors such as, gene susceptibility, time of sowing and corresponding climatic conditions. Blight disease occurs in three stages. (1) Leaf blast (2) Neck blast and (3) Finger blast

There are three stages in disease development

Leaf blast: It is more severe in tillering phase. The disease is characterized by spindle shaped spots on the leaves with gray centres surrounded by reddish brown margins.

Node blast: Infection on stem causes blackening of the nodal region and the nodes break at the point of infection. All the parts above the infected node die.

Neck blast: At flowering stage, the neck just below the ear head is affected and turns sooty black in colour and usually breaks at this point. In early neck infections, the entire ear head becomes chaffy and there is no rain set at all. If grain setting occurs, they are shrivelled and reduced in size.

Management:

- ✓ Use of blast resistant varieties with carbendazim seed treatment at 2g/kg increases yield anywhere between 50-100 per cent.
- ✓ Seed treatment with *Trichoderma harzianum* or *Pseudomonas fluorescens* @6g/kg coupled with two sprays of *Pseudomonas fluorescens* at 0.3% first at the time of flowering can control leaf, neck and finger blasts very effectively.
- ✓ In the absence of varieties with inbuilt resistance, sprays of fungicides are advisable to minimise the disease. Two sprays of Saaf (0.2%) or carbendazim 0.05% or tricyclazole 0.05% with first spray at 50 per cent flowering followed by the second 10 days after were are also effective.

Brown spot or leaf blight or seedling blight: *Drechslera nodulosum*

The disease affects all the parts of plant like root, base of the plant, culms, leaf sheath, leaf blade, neck of the panicle and fingers. When infected seeds are may not germinate at all due to pre-emergence seed rot. In case such seeds germinate, post-emergence rot is very commonly seen. The characteristics symptom on leaf lamina is appearance of brown to dark brown spots. These spots are generally oval in shape and measure 8-10 mm in length and 1-1.5 mm in breadth. Later, these spots coalesce to give the blightning appearance of leaf, especially towards tip which would ultimately be killed prematurely.

Management

- ✓ Seed treatment with Agrosan G N can give complete control of pre-emergence damping off seedling blight.
- ✓ Secondary infection can be reduced by spraying of Mancozeb @ 0.2 per cent control the disease.
- ✓ Low concentrations fungicides folithion and morestan and a rhizome extract of canna inhibited germination of *H. nodulosum* pathogen of seedling blight and leaf spot of ragi.

Looking to the status of the diseases in changing climatic scenario, an integrated approach for management of millets diseases is need of the hour. A farmer friendly IDM packages for the control and management of economically important diseases focused on pearl millet, sorghum, finger millet including minor millets as priority.