

It is costly, so applied for the regional areas. They give the automatic signal to computer that show the data.

Computer simulation of epidemics

Simulation:- If some thing is not present and you make a copy in the absence of that original copy. you can predict on the basis of model and weather condition forecasted.

It is just like the representation of carbon copy in the absence of original. They allow to write program on the basis of which you can predict the disease epidemiology. It allows the plant pathologist to give the simulation of epidemics.

The first computer model was made in 1969, that was developed to modeling the each step of life cycle of pathogen and as function of environment.

1. **EPIDEM:-** → Cercospora blight of cereals
2. **CERCOS:-** → Late blight of tomato or potato caused by Phytophthora.
3. **MYCOS:-** Mycopherella blight of chrysanthemum
4. **EPIORN:-** Southern corn of Blight (i.e. *Cochliobolus helminthosporium*)
5. **EPIVEN:-** Apple scab (*Venturia inaequalis*)
6. **EPIDEMIC:-** stripe rust of wheat.

- It will provide the information of
1. How the disease effects
 2. How much loss it cause.
 3. On which stage it effect
 4. What are the control measures.

Lecture No. 27

Examples of plant disease forecast

Criteria- system:-

It is very usefull to ercent the most factors or variable for disease forecasting

1. primary inoculum information
2. infection cycles / secondary inoculum factor

1:- Primary Inoculum criteria

Disease forecasted are:

1. Stemmy rot of corn
2. Blue mold of tobacco
3. Fire blight of apple and pear
4. pea rot-rot
5. sclerotium and smut disease of sorghum

2:- Secondary Inoculum Criteria

1. Late blight of potato
2. cercospora and other leaf spot disease
3. Downy mild of grapes

3:- Both.

1. Apple scab
2. Black rust of grapes
3. Cereal rust Grape mild
4. Botrytis leaf blight sugar beet
velvet

Plant Pathology

PP-308

Practical Part

Scoring stripe rust

Detailed outlines for recording stripe rust intensities in cereals are based upon:

- Severity (percentage of rust infection on the plant) and
- Field response (type of disease reaction).

Severity is recorded as a percentage, according to the modified Cobb scale. This recording process relies upon visual observations, and it is common to use the following intervals: Trace / 5 / 10 / 20 / 40 / 60 / 100 percent infection.

Field response is recorded using the following letters:

O	No visible infection on plant.
R	Resistant: visible chlorosis or necrosis, no uredia are present.
MR	Moderately Resistant: small uredia are present and surrounded by either chlorotic or necrotic areas.
M	Intermediate: variable sized uredia are present; some with chlorosis, necrosis, or both.
MS	Moderately Susceptible: medium sized uredia are present and possible surrounded by chlorotic areas.
S	Susceptible: Large uredia are present, generally with little or no chlorosis and no necrosis.

Severity and field response readings are usually combined.

For example:

tR = Trace severity with a resistant field response.

5MR = 5% severity with a moderately resistant field response.

60S = 60% severity with a susceptible field response.

Figure 1. Examples of scoring Stripe rust severity

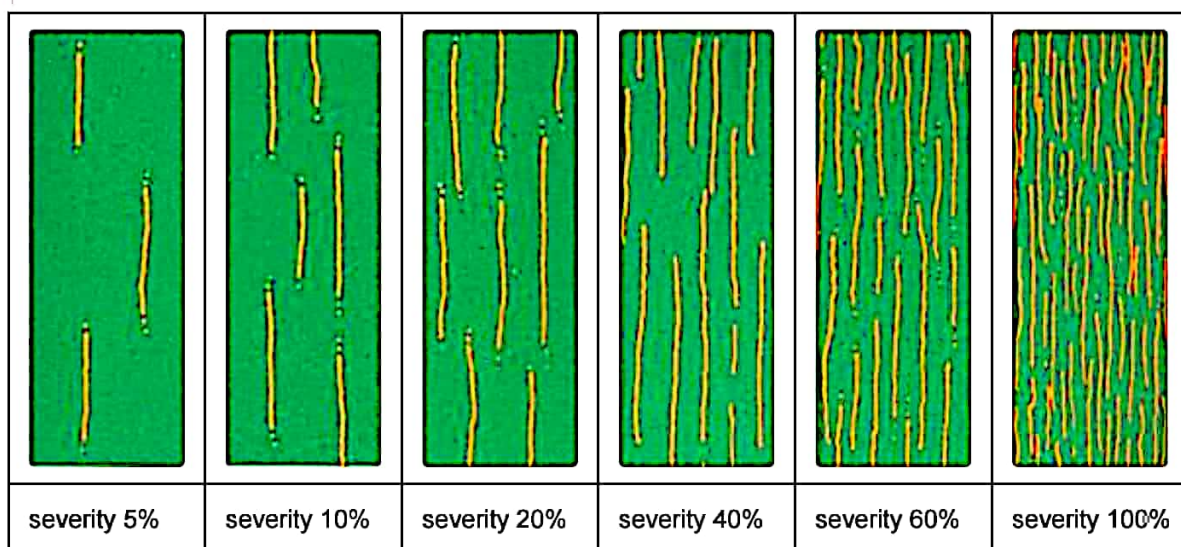
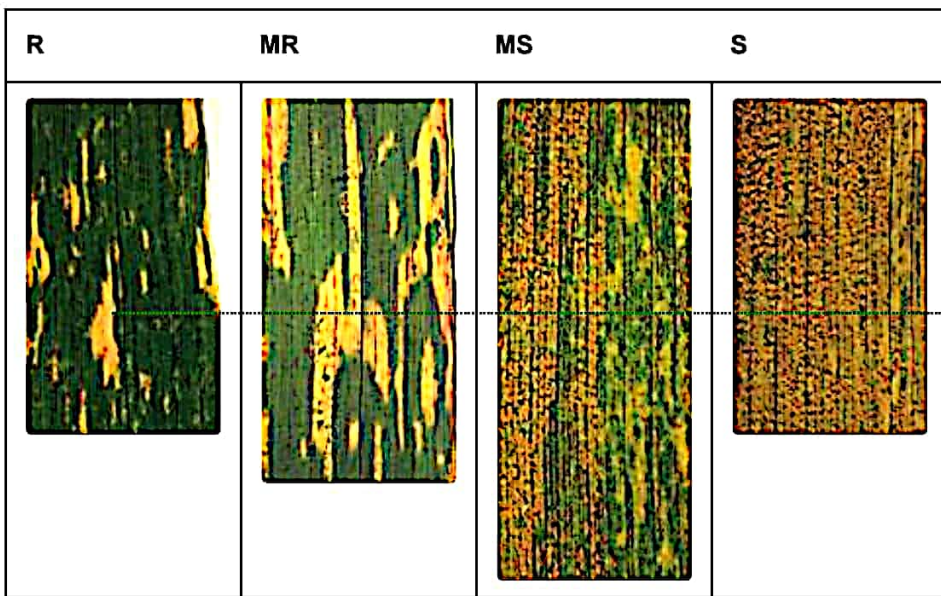


Figure 2. Examples of scoring Stripe rust field responses

R	MR	MS	S
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MAIN MENU

Home (/)

Getting started (/getting-started)

Field sampling (/field-sampling)

Production problems ▾ (/production-problems)

Nutrient problems ▾ (/nutrient-problems)

Pests & diseases ▾ (/pests-diseases)

Measurement methods (/measurement-methods)

Glossary (/glossary)

Image galleries (/image-galleries)

References/Contributors (/references-contributors)

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