formula — $\sum_{i=1}^{n-1}\left(\left(\frac{x_1+x_2+x_3}{2}\right)\right)$

3. Fire Blight of apple

C.O.

⇒ Erwina amylovora.

If temperature is below 15°C then grow and 17°C later. If 11-March - 1st may temperature 14.4°C - 16.7°C. Then there will be epidemic case of disease Here you should use coper base Fungicide.

Lec #28

Forecasts based on weather condi

Favouring development of 2ary Inocul

Fore late blight of potato, the primary inoculum is very less then you can predict on base of weather.

1. constant cool temp - 10-24c
2. Relative humidity least 48 hour 75%.
3. Relative humidity least 4 hour for 6 day 90%

Then it will come in epidemic form with in 2-3 weeks. If the range is more then it will come in epidemic form more earlier.

Forcasting ste system for prediction.

1. **BLITECAST:-** Late blight of potato predi forcast
2. **FAST:-** To predict Alternaria solani in
3. **TOMCAST:-** To predict early Blight of tom septoria leaf Blight, anthracnose

4. **PLAM:-** Pea nut leaf spot Temperature + Moisture
5. **Added Factors:-**
   Fungicide eficiency
   New resistance of varities.
6. **Leaf spot disease:-**
   cercospora of peant
   celery
   Helminthosproium.

prediction can be done by trapping of spore in air daily, Temperature and R.H=100% and for secondry inoculum prition R.H=95-100% for 10 hours

Firstly used by Shaner & Finney (1977)

$$= \sum_{i=1}^{n-1} \left[\left(\frac{x_{i+1} + x_i}{2} \right) \times (t_{i+1} - t_i) \right].$$

x = disease index expressed as a proportion at the ith observation:
t = time (day after planting) at ith observation
n = Total no of observation.

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

Computer simulation of epidemi

Simulation:- If something 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 forcasted. It is just like the representa of carbon copy in the absence of original. They allow to write program on the basis of which you can predict the disease epidemology. It allows the plant pathol 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 functio of environment.

1. **EPIDEM:-** Cercospore blight of cele
2. **CERCOS:-** Late blight of tomato or potato caused by phytophthora.
3. **MYCOS:-** Mycopherella blight of chrysanthe
4. **EPICORN:-** Southren corn of Blight i-e cochliobolus Heterosporium)
5. **EPIVEN:-** Applescab (venturae inaquahs
6. **EPIDEMIC:-** Stripe rust of wheat.

Plant Pathology
PP-308
Practical Part

Rating Scales/Scoring Scales

Dr. Sulman Ahmad

Rating/Scoring Scale

- These scales are used to rate/determine the reaction of the varieties and disease severity present on them.
- Different rating scales are available for different diseases

Rating scale for yellow rust of wheat

- See the attachment separately attached.

Rating Scale for Citrus Canker

Grade	Disease Severity (%)	Response
0	00-00	Highly Resistant
1	01-05	Resistant
3	06-10	Moderately Resistant
5	11-15	Moderately Susceptible
7	16-25	Susceptible
9	26 and above	Highly Susceptible

Rating scale for Chickpea blight

Infection %age	1-10 Point Scale	Symptoms	Reaction
1-10	1-<2	No infection or small lesions	Highly Resistant
11-20	2-<3	Some stem lesions - minor stem breakage in upper foliage	Resistant
21-30	3-<4	1-2 branches broken. Several girdling stem lesions low down on some branches	Resistant
31-40	4-<5	Large basal stem lesions or several branches broken near to main stem	Moderately Resistant
41-50	5-<6	Half foliage dead	Moderately Resistant
51-60	6-<7	Half foliage dead or dying, but young shoots still actively growing from base	Moderately Susceptible
61-70	7-<8	Most foliage dead - some healthy stem tissue with lateral buds	Susceptible
71-80	8-<9	Most foliage dead, no healthy lateral buds in leaf axils	Susceptible
81-90	9-<10	Most foliage dead, decreasing areas of living stem tissue	Highly Susceptible
91-100	10	Plants completely dead	Highly Susceptible

(Khan *et al*., 1999a)