

CONSERVATION AGRICULTURE SYSTEMS AND CROP DISEASES

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INTRODUCTION

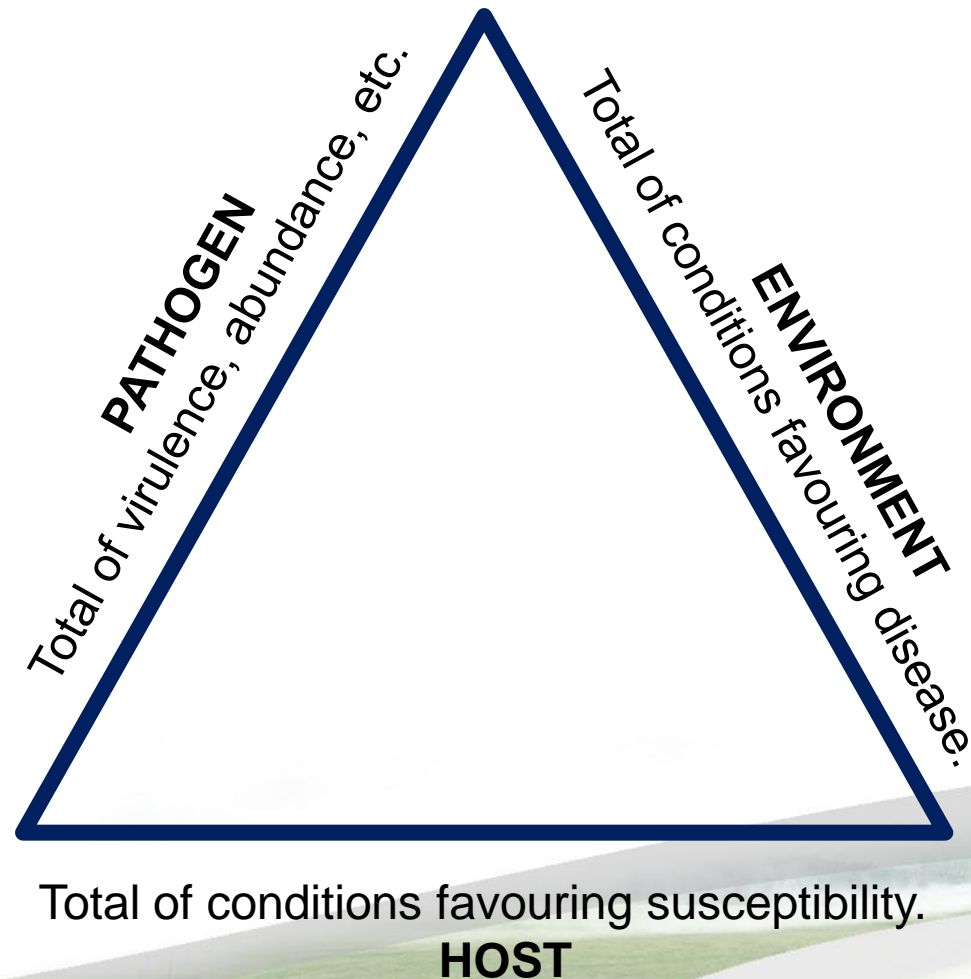
- Increase in disease epidemics previously thought to be under control
- Reasons include poor resistance, increase in inoculum levels and lack of suitable alternate crops
- CA has many advantages to the farmer but increased disease potential is a major disadvantage

DISEASE EPIDEMIOLOGY

- Disease triangle
- Monocyclic vs polycyclic diseases
- Pathogen survival mechanisms
- Rotation crop options
- Integrated control

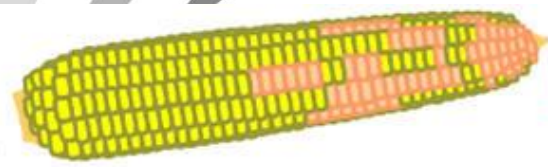


DISEASE TRIANGLE



MONOCYCLIC DISEASE

Infection occurs through silks, kernel wounds (birds, insects) or systemically through roots



Infected ear

Fungi survives in debris in soil or on soil surface

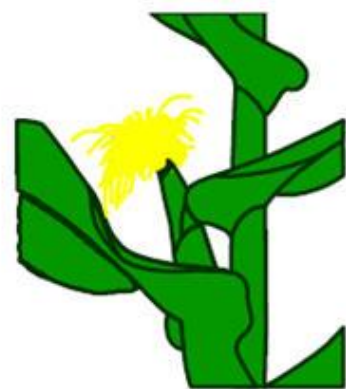


Disease cycle

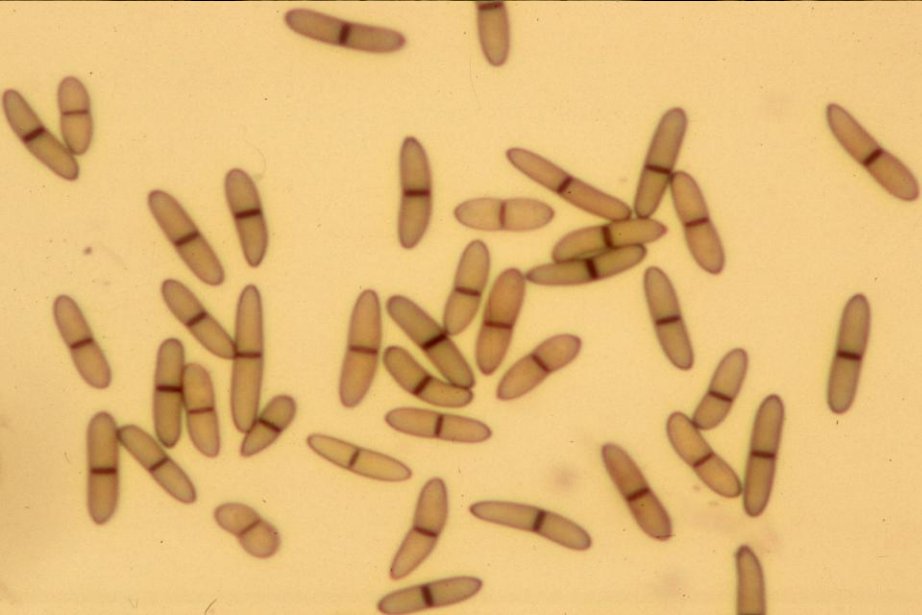
Fungus also commonly seedborne



Macroconidia, microconidia are soilborne and airborne



DIPLODIA EAR ROT



POLYCYCLIC DISEASE

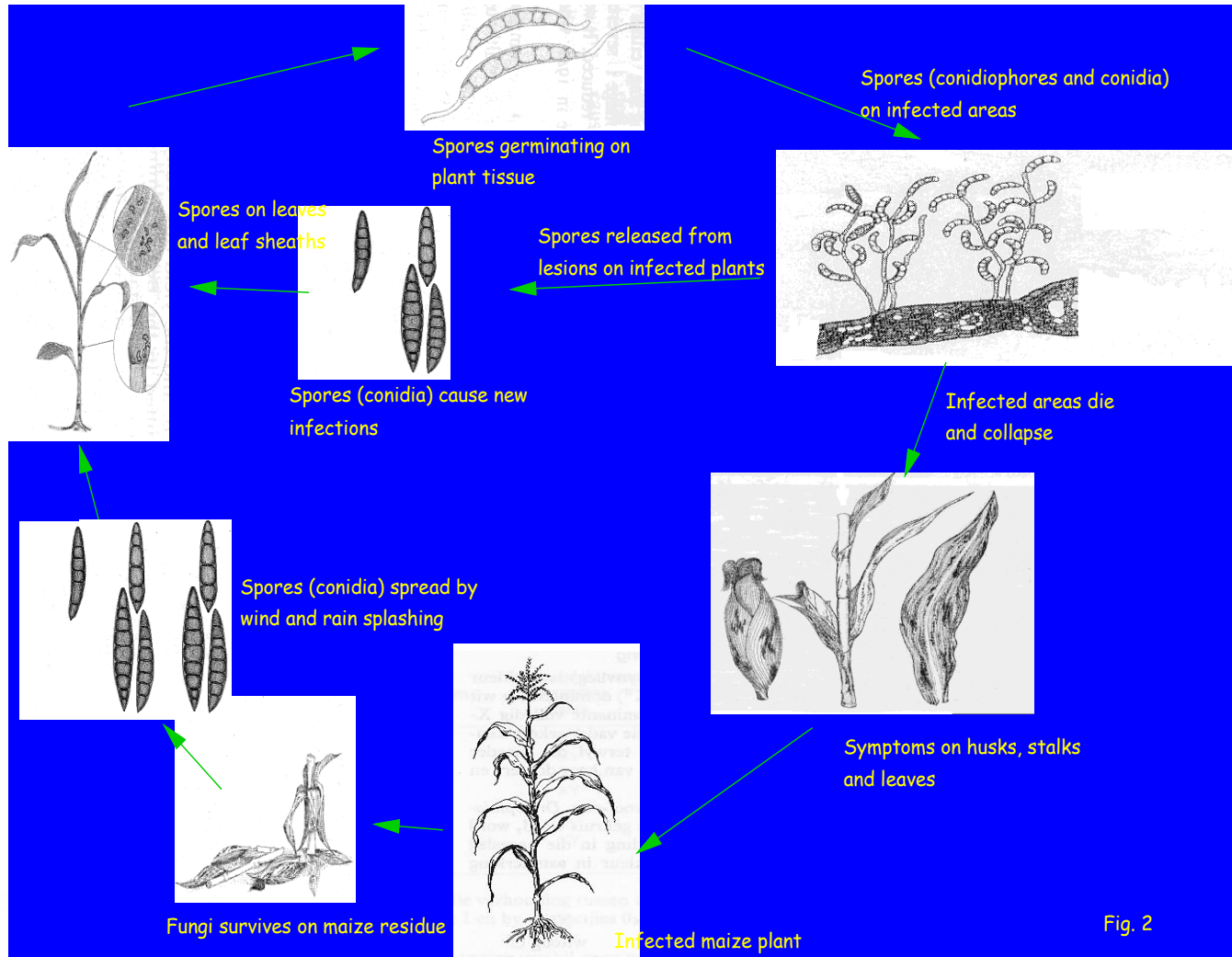


Fig. 2

GIBBERELLA COMPLEX

Host	<i>F. graminearum</i>	<i>F. boothii</i>	<i>F. meridionale</i>	<i>F. cortaderiae</i>	<i>F. acaciae-mearnsii</i>	<i>F. brasiliicum</i>	N =
Wheat	85.2	8.3	3.6	1.1	1.4	0.4	277
Barley	87.2	12.8	0	0	0	0	148
Maize	0	99	0	0	0	0	100
Maize (roots)	74	12	14	0	0	0	35