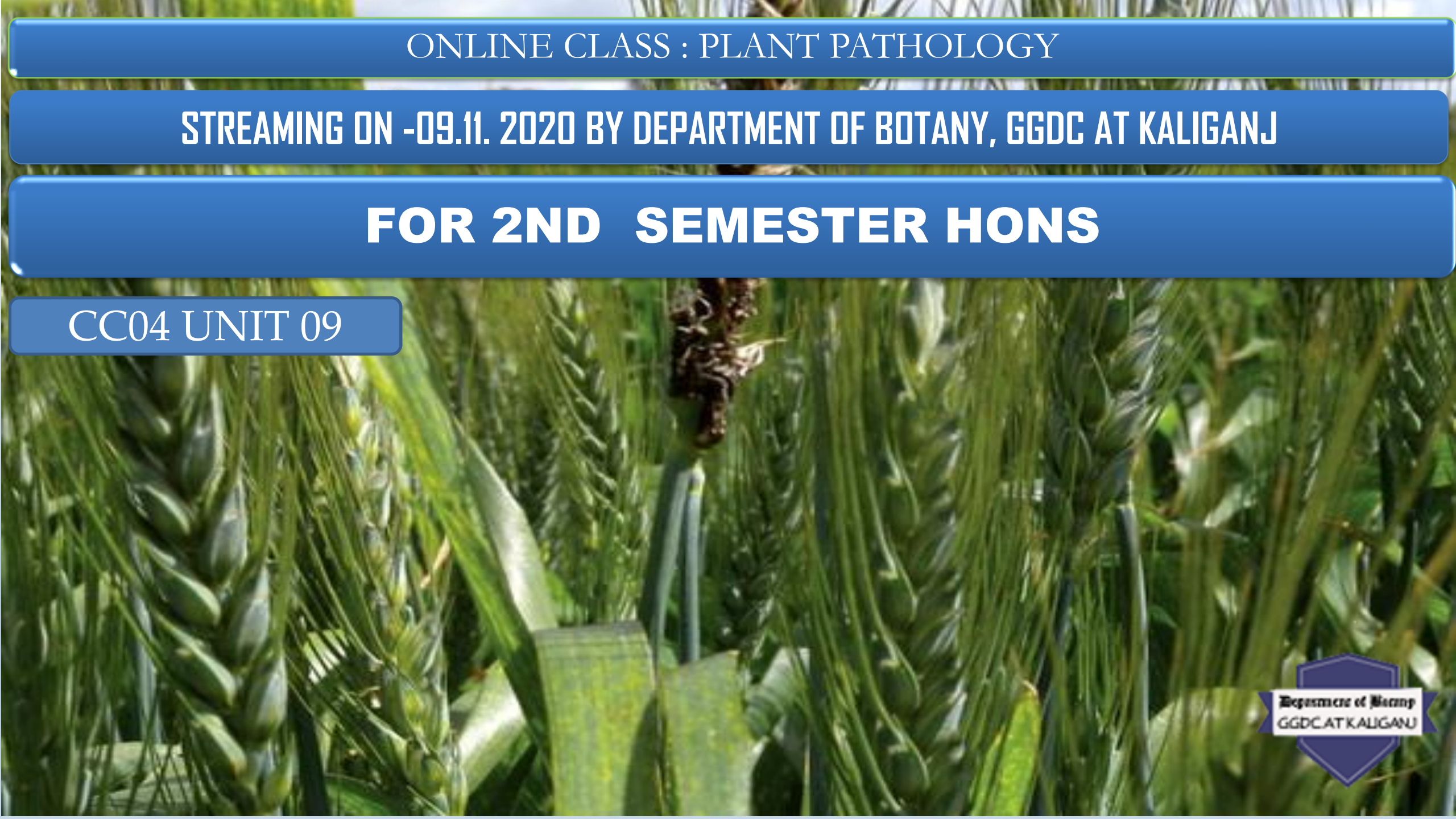


ONLINE CLASS : PLANT PATHOLOGY

STREAMING ON -09.11. 2020 BY DEPARTMENT OF BOTANY, GGDC AT KALIGANJ

FOR 2ND SEMESTER HONS

CC04 UNIT 09



Department of Botany
GGDC AT KALIGANJ

LOOSE SMUT OF WHEAT



ABOUT THE DISEASE

The Disease is prevalent throughout the world and in all wheat growing regions of India; prevalently found in cooler and humid region.

Commonly known as Smut, Black head, Snuffy ear etc.

Among Wheat diseases the loss is estimated around 30 percent.





SYMPTOMS

- *Symptoms appear first only when the ears (The inflorescence which bears the spikelets and grains subsequently) are developed.*
- *The ear emerged first in diseased plants compared to the healthy plants.*
- *Incsase of infected ones all ears in a stool are affected.*

- *Infected Plants show **less tillering** thereby affecting the ultimate yield.*
- *Excepting awns all parts of the ear get affected.*



- *The **smutted heads appear as black head** as all the grains and glumes structures are replaced by black powdery masses of spores.*

- At first the masses of spores are covered with a grayish or silvery membrane.
- Soon the membrane gets disrupts and spores dispersed by wind or rain leaving the rachis of the head or ear empty or naked.
- Very few tillers may escape the disease having produced from a infected seeds.



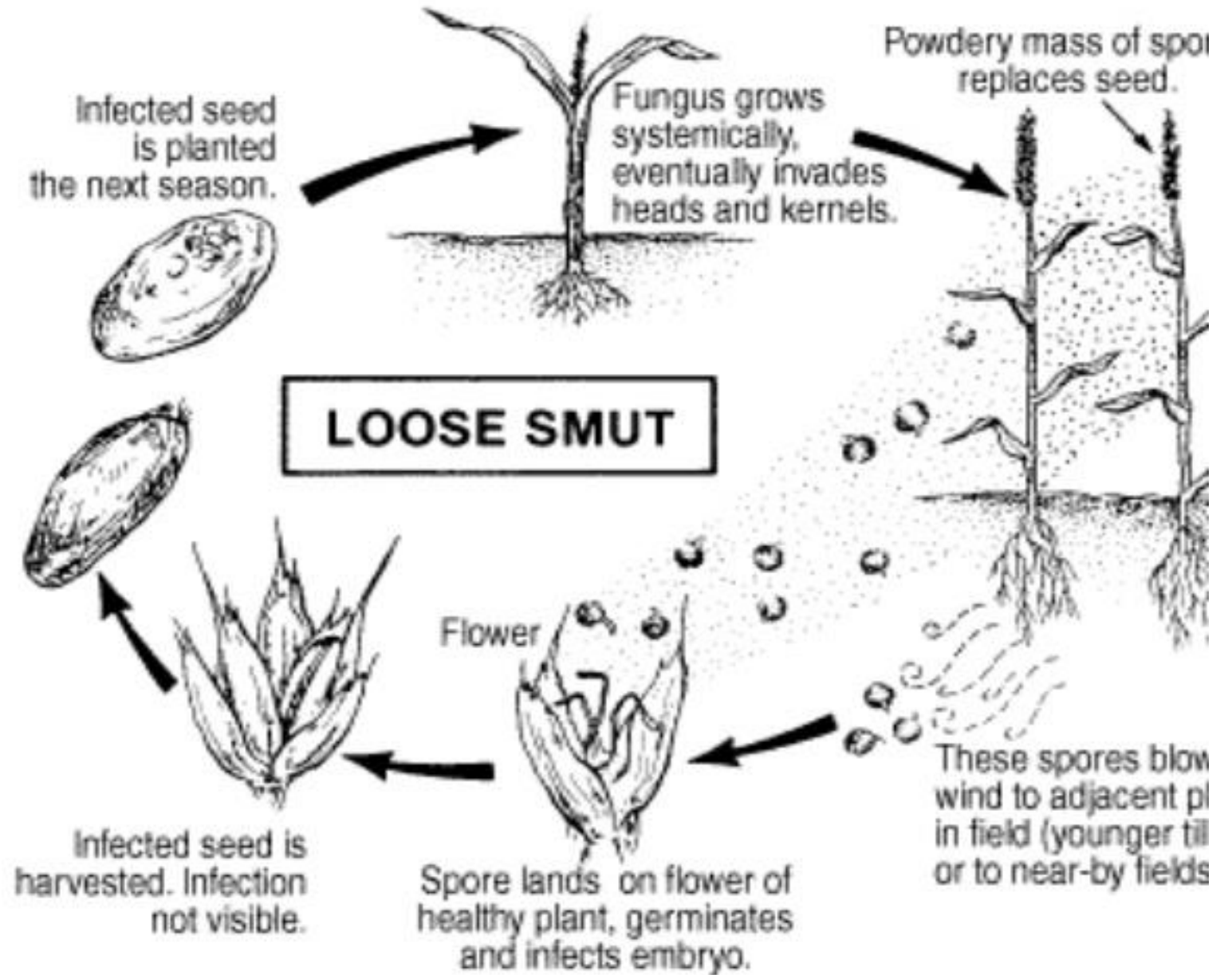


Kingdom	–	Mycota/ Fungi
Division	–	Eumycota
Sub division	–	Basidiomycotina
Class	–	Teliomycetes
Order	–	Ustilaginales
Family	–	Ustilaginaceae
Genus	–	<i>Ustilago</i>
Species	–	<i>segetum</i>



THE PATHOGEN

DISEASE CYCLE



CONTROL

- **CULTURAL METHODS-**

- **Use of healthy seeds for sowing**
- **Seed treatment-**
 - **Seed dipping in Hot water at 25-30 degree C for 4-5 hours prevent activation of mycelium.**
 - **Seed soaking in cold water at RT for 56-64 hours which increases anaerobic respiration for which mycelium dies.**
 - **Drying of seeds out in the Sun followed by soaking for 4 hrs. On a bright summer day.**

CHEMICAL CONTROL-

- Balanced fertilization of Nitrogen and proper irrigation.
- **Seed Treatment-** Vitavax 2.5 gm/kg seeds.
Benomyl & Carboxin – 0.2-0.25%
- **Use of Systemic fungicides-**
 - Bavistin SD (50% a.i)
(Systematic fungicide)

BIOLOGICAL CONTROL-

- Use of TV-5, a strain of *Trichoderma viridae*
- **USE OF RESISTANT VARIETIES-**
 - **Kalyan 227,**
 - **PV 18,**
 - **WG 307,**
 - **C 302,**
 - **Kalyasona etc.**



*THANK YOU FOR
YOUR ATTENTION*