Hello students, I am Rashmita Mhaldar Assistant professor in botany, from Dhempe College of Arts and Science Miramar Panjim Goa So this module is for 3rd year B.Sc. botany student subject is botany Semester 5 course code is 107.Course title is Microbiology and plant pathology.

The title of the unit is Unit 6 introduction to plant pathology. Module name is plant pathology terms and concepts outline for this module is definitions in plant pathology, terminologies in plant pathology and concepts in plant pathology. The learning outcome are at the end of this module the student will be

able to recognize the definition of plant pathology. They will be able to describe the various definitions in plant pathology and they will able to explain the various terminologies in plant pathology.

Coming to the introduction, the definition of plant pathology, it is the branch of agriculture. Botanical or biological science, which deals with the cost, aetiology, resulting losses and control of the plant diseases.

Here I have the picture of corn smut disease, which is caused by the fungal pathogen Ustilago maydis, and second picture is of a corn leaf Southern rust pathogen, which is caused by the fungus, Puccinia

Polisora.

Coming to the definitions in plant pathology in first definition is incubation period, It is the time interval between the penetration of the host by a pathogen and the first appearance of the symptoms on the host.

Second definition is disease cycle, so a disease cycle is a series of events involved in disease development, including the stages of development of the pathogen and the effect of disease on the host then symptoms is the internal physiological or external morphological reactions or changes as a result of disease.

Then the next definition is inoculum. It is a part of the pathogen which, on contact with the susceptible host plant, causes infection or the infective propagules, which on coming into contact with the host plant,

causes an infection and this is referred to as inoculum. Next is plant injury, It is a abrupt alteration of form or function caused by a discontinuous irritant, planned injury is caused may be by insect, animal or physical, chemical or environmental agents.Next definition is a causal agent is a general term used to describe an inanimate or animate factor which causes and governs disease and injury.

Now next we have the terminologies in plant pathology.

The first is plant disease so plant disease is a physiological disorder or structural abnormality that is harmful to the plant or any of the parts or product that reduces the economic value of that plan.

Then next terminology is a pathogen, so pathogen is any agent which cause damage to the plant here, pathogen means living organism that can be fungi, bacteria, viruses or nematode. Pathogenicity it is a quality or characteristics of the pathogen of being very able to cause a disease.

So next terminology is pathogenesis, It is a sequence of progress in the disease development from the initial contact between the pathogen and its host to the completion of syndrome So this is called as pathogenesis.

Then next terminology is a host, so host is an Organism. Basically, it will be a plant that bear

that base or supports the activities of a parasite and that is referred to as host. Next term is inoculum, so inoculum is the infectious material that cause disease and it is that portion of the individual pathogen that is brought into contact with the host. So next term we have is penetration, So basically penetration is the

first step in contact when the Pathogen come in contact with the inoculum with the host.

It refers to the initial invasion of the host by an Organism.

Next term is infection, so infection it implies the establishment of pathogen inside the host following penetration, in which a parasitic relationship between the two Organism is established syndrome.

The disease plant show various valuable symptoms by which, or diseases recognize these symptoms. They are collectively referred to as syndromes. Next term is virulence. organism is basically a virulent

organism which is considered to have a high capacity of pathogenicity, and this is referred to as Virulent organism.

It may be defined as the effect of one or more environmental factors basically which makes a plant

vulnerable which is basically able to cause injury by the attack of pathogen. Next term is susceptibility.

It is the inability of the pathogen to resist the effect of pathogen and of any other damaging factors.

Then next term we have is resistant. It is basically the inherent ability of the plant to prevent or restrict,

basically to prevent or restrict establishment and subsequent activities of the potential pathogen.

next term we have is immunity, It implies exemption from infection by the pathogen. Next term is endemic disease, so endemic disease when the disease is constantly present in the moderate or severe form and is confined to a particular country or district. it is set to be endemic disease. Second term is epiphytotic disease or epidemic disease, so epidemic or epiphytotic disease usually occurs widely, but periodically in the district, it occurs in destructive form.

Next term is pandemic disease, so this occur all over the world and it is result in mass mortality. Spordiac disease, which are the disease which occurs at very irregular intervals and locations, and in the relatively fever instances, and these are referred to as spordiac diseases.

Next term we have is parasite, so parasite is an organism which derives the material they need for growth from living plants. Basically it will be host or will be susceptible to the pathogen and they are called as parasite. Then symptom is the external internal reaction or alteration of the plan as a result of a disease.

Next term is syndrome or set of varying symptoms, characterizing a disease and they are collectively referred to as syndrome. Next term is sign. So the sign of a pathogen or its part or product seen on the host plant. They are referred to as signs. Then next we have various concepts in plant pathology, so the first concept is biotrophs. So biotroph is an organism that can leave and multiply only on the another living organism. They always obtain their food from living tissue on which they complete their life cycles. So these are referred to as biotrophs. Then second, we have is facultative saprophytes.

They are the parasite which attack living tissue in the same way as biotrophs but will continue to grow and reproduce after the tissue is dead and it is called as facultative saprophyte. Third one we have is They are also referred to as Necrotrophs which are the parasite , it is a necrotrophs when it kills the host tissue in advance of penetration. So next concept is hypersensitivity, hypersensitivity is sensitive excessive sensitivity of plant tissue to certain pathogens affected cells are quickly blocking the advancement of obligate parasite.

Next is infection is the establishment of parasitic relationship between two organisms following the entry or the penetration or the establishment of the parasites within the host plant.

Next we have the systemic infection, the growth of pathogen from the point of entry to varying extent without showing adverse effect on tissue through which it passes.They are referred to as systemic infections.

Then next concept is infection Code is a certain part of a given plan that is susceptible to a particular pathogen. In all pathogens successful infections usually result in appearance of disease symptoms.

Next is colonization. So basically colonization of the host result from the establishment.

Growth and reproduction of the pathogen on the infected plant, and this is referred to as colonization.

Next concept is infestation, which is referred to the establishment of the pathogen on the surface of the host plant. So with infestation there is no implication that infection has occurred. Next concept is symptom. So basically symptom of the plant diseases. A visible effect of the disease on the plant.

Symptoms may include a detachable or detectable change in color, shape or function of the plant as it responds to the pathogen. So these are my references for these modules.

Thank you very much.