



## MANAGEMENT OF FUNGAL DISEASES OF SOME IMPORTANT LEAFY VEGETABLES CROPS

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**Abstract-** Vegetables are significant ingredients in human diet. The nutritive estimations of sound vegetables are changed as a result of parasitic assault and now and again fungi produce certain mycotoxins in them and make them unsuitable for human utilization. The leafy vegetable yields are developed for vegetable and restorative properties (Naik, 1998). Leafy vegetables have more nourishment per calorie than some other nourishment. Greens make up huge wellspring of nutrients A, B, C, E and K. They are rich wellsprings of minerals, for example, calcium, magnesium, iron and potassium. They are wealthy in fiber, very low in fat and starches and give a fantastic wellspring of protein. In any case, the diseases, if not oversaw on a war foot, it will result in drastic yield decrease and nature of the produces. Henceforth appropriation of suitable administration measures with low buildup levels in the last delivers becomes as a need of great importance. Right now, paper gives accentuation on the analysis of plant diseases and their administration.

**Keywords:** vegetables, leafy vegetables, diseases, fungi, pathogens, management.

### I. INTRODUCTION

There are a few assortments of these leafy vegetables either in the wild or under cultivation in the provincial areas. Vegetables comprise the most significant and reasonable segment of a fair diet, which individuals currently acknowledge because of their high nutritive qualities irreplaceable for the body. During the most recent two decades impressive accentuation has been laid on expanding creation of vegetable crops in India. The time of human advancement which impacted the extreme movement to urban focuses has anyway affected the selection of vegetables utilized as nourishment. Greens make up critical wellspring of nutrients A, C, B, E and K. They are rich wellsprings of minerals, for example, calcium, magnesium, iron and potassium.

The cultivation of vegetables is exposed to the desolates of different plant pathogens, for example, fungi, microscopic organisms and infections. These plant pathogens are operators that cause diseases. Our warm and moist conditions are favorable for improvement of a large quantities of diseases. Persistent cropping and poor agronomic practices likewise add to disease advancement. Ailing vegetables are as often as possible communicated by advancement and creation of side effects. Some regular side effects on explicit pieces of plants incorporate shrinking, staining, spotting, contortion, expanding, hindering, lengthening or decaying of either leaves, stems, natural products or roots.

Diseases are major components that limit the development of vegetables. Diseases primarily harm the quality of the crop. Serious diseases may decrease the quality of crops to those that cannot be sold.. Pathogens are moulds (ungis) and microscopic organisms that cause the most widely-known diseases of leafy greens, but diseases caused by infection and nematodes also can cause problems. This fact sheet is designed to help farmers recognise and include general rules to monitor these diseases.

Exact evidence of a disease is essential for an effective management programme. For example, if the pathogen is a microorganism, the use of a fungicide to control a leaf spot disease would not succeed. On the ground, certain diseases can be distinguished routinely with a small meeting. Consider presenting tests at an extended laboratory in the nearby OSU Plant Disease Diagnostic Laboratory for diseases that are hard to identify in the field. Counsel Fact Sheet for prescribed schemes for taking and submitting good examples EPP-7612, Plant disease and Insect Diagnostic Services. As the registration of pesticides for disease management is changing year after year, the advice is on the latest release of the Insect, Plant Disease and Weed Control Agency Manual (Extension Circular E-832).

### II. DISEASES AND THEIR SYMPTOMS OF CRUCIFERS (LEAFY VEGETABLES)

1. Black rot: is one of the most genuine disease of crucifers. It is brought about by the microbes, *Xanthomonas campestris* pv. *campestris*. The underlying side effect is yellow V-molded injuries with a

darkening of veins; for the most part create around the leaf edge. As sores enlarge, leaf tissues turn dark colored and dry out. Broadened times of warm and wet climate favor quick spread and contamination. In this manner, dark spoil is generally extreme in the spring creation season as temperatures warm.

The disease spreads quickly by sprinkling and running water, creepy crawling and workers and machinery. In the late dew or in the blustered environment, a disease occurs primarily through hydathodes which are characteristic openings on leaf edges. Whenever infected plants are generated because of the collection, neighbouring leaves are not marketed. Plants are indefensible at any stage of improvement. Sowings of polluted seeds bite dust quickly and fill microscopic organisms with sources which tingle various plants. The disease is perceived in visible leaves by the closeness of the yellow V-shaped sore extending internally from the edges of the leaf.



2. Leaf blight exacted by the growth, *Rhizoctonia solani* regularly happens after an abrupt difference in climate, eg. Unexpected shower in the early evening time during a sweltering day. Tainted leaves have patches of dull green or dark colored injuries which in the long run dry out.



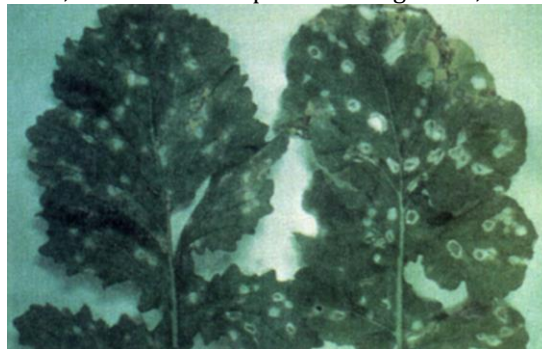
3. The parasite, *Choanephora cucurbitarium*, causes leaf rot. Contaminated tissue turns dark and accidents of minute, pin-sized pimples are secured with hairlike greyish infectious fruit bodies.



4. The parasite, *Peronospora brassicae*, produces Downy mildew. The signs are sporadically yellowish spots on the top surface with dark coloured spots comparable on the bottom surface. Under muggy conditions, white or dark mycelia and spores protect the surface of the leaf sores. The leaves painted are evaporated at the end.



5. White rust: White rust of crucifers, caused by the white rust parasite in an alternative way, has not been seriously recorded in Oklahoma yet. The organism persevere in the soil like healthy, disease-free spores that can pass over for a long time. From there on, disease increments from airborne spores that spread inside and between fields. Cool (60 to 77°F) and wet climate is favors disease. Yellow spots happen on the upper surface of tainted leaves. Various little, white, rankle like pustules are dissipated on the undersides of leaves. The pustules, which contain spores of the growth, show up as a white pasty residue.



### III. STRATEGIES FOR DISEASE MANAGEMENT

1. Prevention: Restrict passage of pathogens into fields through planting materials, water system water, laborers, and devices.
2. Monitoring: Engage in customary field exploring to distinguish disease side effects and plant disease vectors. Continually audit bother alarms from analytic centers, state and government organizations, cultivator magazines, and announcements.
3. Accurate Disease Diagnosis: Consult Extension operators and symptomatic centers. Distinguishing the causal living being for a disease is applicable as generally organic and substance control choices accessible are pathogen explicit.
4. Development of Acceptable Disease Thresholds: Understand the impact of a disease and yield misfortune. For instance, 10% disease rate in view of a particular pathogen may not cause a noteworthy yield misfortune in a vegetable crop, in which case compound control might be a pointless cost.
5. Optimal Selection of Management Tools: Identify a coordinated management plan contingent on the disease, crop, and field history. The field history of disease flare-ups is exceptionally pertinent in surveying

the hazard associated with the creation. Social, have plant obstruction, natural, and compound control choices ought to be founded on the conditions in that particular area.

For disease management, it is essential to comprehend the capability of a pathogen to taint a crop and spread inside the crop in a particular district. The three primary parameters of disease progress are as per the following:

1. Initial measure of pathogen inoculum (infective structures).
2. Rate of disease increment.
3. Duration of crop improvement.

These parameters associate to create a quick increment in pathogen populaces, which shows as exponential disease improvement in numerous creation frameworks. The pace of disease increment after some time is needy upon the cooperation's of the pathogen, have plant, and the earth. For disease management purposes, the greatest worry for cultivators is the collaboration of the pathogen and have and the perfect ecological conditions, which assumes a basic job in deciding the idea of plant disease scourges. This arrangement of connections is known as the disease triangle (Figure 1), which decides the destiny of a disease on a crop.

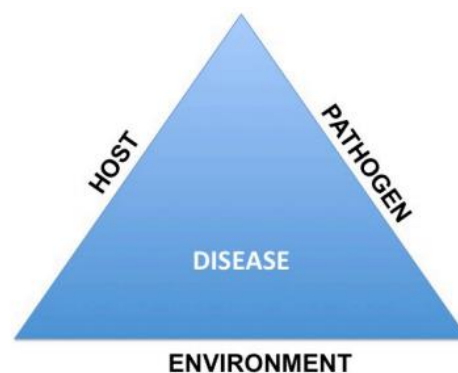


Figure 1. Disease triangle indicating interaction of the pathogen, host, and the environment leading to a plant disease  
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#### IV. EFFECTIVE MANAGEMENT OPTIONS

1. Understanding the science of the pathogen, have pathogen connections, and the impact of ecological factors on this dynamic procedure in reality (disease the study of disease transmission) is basic for arranging and actualizing viable and productive management techniques. These procedures can influence specific parts of the pathogen populace's development. For instance, have opposition can influence all disease progress parameters by decreasing the measure of inoculum by means of protection from specific strains of the irritation.

2. Reducing a pathogen's conceptive limit eases back the pace of pathogen development.

Lessening the absolute time of presentation in short-season assortments can likewise be a successful management procedure. Social control rehearses, be that as it may, are planned for lessening the essential inoculum (sanitation) or diminishing the pace of disease increment by changing the crop condition. A genuine case of the last is the utilization of dribble water system as opposed to overhead water system to decrease free water on foliage. Natural control for the most part influences the pace of pathogen development. At long last, substance control can influence the measure of inoculum accessible toward the start of the period (i.e., soil fumigation) or potentially decrease the pace of disease advancement by slaughtering a segment of the pathogen engaged with later phases of pandemics. IPM consolidates these practices with pathogen comprehension to create a feasible and financially helpful management framework. The remainder of this record further clarifies the fundamental ideas of IPM while referring to explicit models for its ordinary field use.



## V. MONITORING PATHOGENS

As referenced, observing is a basic part of a powerful IPM program. Observing can be immediate (searching for the pathogen or disease) or roundabout (recording natural conditions that influence disease advancement). Monetary contemplations weigh intensely in the decision of observing practices. Direct disease checking can be founded on indications or indications of the pathogen. Pathogen ID is commonly troublesome in light of the fact that they are normally minuscule and can be identified regularly after the disease procedure has started. Most checking is really for disease manifestations, with the control methodology planned for diminishing additionally spread. In any event, when obvious side effects are clear, disease levels might be so low as to make recognition troublesome.

## VI. CONCLUSION

It was observed from the above discussion that parasitic disease of vegetables is brought about by a few pathogenic fungi under various conditions. Numerous investigations have been done as for event, causal life forms, seriousness, misfortunes, Pathogenicity and disease management. This audit may assist the future specialists with devising a solid system for assessing diverse obsessive angles and management of the post gather contagious diseases of vegetables. In any case, further investigation is expected to uncover the various ongoing reports about different obsessive perspectives on the contagious diseases of vegetables and management systems settled on diseases.

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