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Study of Fungal Diseases on Tomato Crop Field at Wadval Nagnath, Dist. Latur (MS)

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Abstract: *Tomato is an important cash crop cultivated throughout around the year. It have great important and economical, medicinal value. It originated in Western South America and introduced in other parts. Like other crop, tomato crop got infected with number of diseases e.g. Early blight, Late blight, Leaf spot, Fruit rot etc. Which causes great loss in yield of crop and economic loss 80% of the total yield of crop to the farmer.*

Keywords: Lactophenol, Cottonblue, Alternaria, Pathogen

I. INTRODUCTION

Tomato [*Solanum lycopersicum*] is an important cash crop Cultivated around the year. Its native place is western South America. In India it arrived by Portuguese, in the 16th Century. Tomato have great importance value as an all forms of food and medicinal too. It used as salad, Ketchup, sauce, pickle, etc. It also has great medicinal property. It is rich source of vitamins & minerals. It contains vitamins A and C. Important for bone growth, cell division, and well functioning of immune system. Tomato consist antioxidant lycopene. It also used gastric disorders, respiratory, Urinary disfunctioning.

Tomato plants are cultivated in warm weather and much sunlight. Plant are branched, leaves are pinnately compound and hairy. Flowers are yellow, five-petals. Fruits are berries, belongs to family, Solanaceae.

II. MATERIALS AND METHOD

The present study was carried out Wadval Nagnath field of tomato crop From Latur district at Maharashtra state. Wadwal Nagnath Tq. Chakur, Dist. Latur situated at 18°30' 47" N 76°52′31″E in Maharashtra State. Field samples collected from June 2015 to March 2017. Wadwal Nagnath is the largest tomato Cultivator center in Latur district and Her is next to it.

During the investigation period tomato field visited regularly and diseased plant parts were collected, Sample brought to laboratory and slide were prepared with the help of lactophenol and cottonblue observed under research binocular microscope with the help of permanent slide and available literature.

III. RESULT AND DISCUSSION

Diseases observed entire period of investigation. Disease development depends on number of factors e.g. Concentration of spore load, Inaculum, growth stages of tomato Crop. Climatic factors like rainfall, temperature, humidity, Concentration of CO_2.

Following diseases observed during the study period.

3.1 Leaf spot of tomato - *Alternaria solani*

One of the common disease caused by airborne pathogen. *Alternaria solani* the disease appears as small brown pale brown spots on lower leaves first. In Severe condition it turns dark brown to black in color, development of chlorosis and necrotic regions leaves.

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3.2 Early blight of tomato - *Altenaria solani*

Disease appears after 3-5 weeks after plantation. First symptoms of disease were small light brown to dark brown or black spot on younger leaves as well as cocentric lines inside the spot. On later stage spots converts into large patches development of necrotic regions, chlorosis, leaf lessions.

Alternaria produce toxic chemical known as alternaric acid. Leaves falldown, disease spread to other part and result into fruit rotting, Falldown of whole plant. Disease appear on when temperature 24-30°C and relative humidity 70-75%

3.3 Lateblight of tomato -*Phytophthora Infestans*

Disease is caused by soil borne fungus *Phytophthora infestans*.

Lower leaves were got infected first. Incidence of light green spot, later on it changes into dark brown to black spot, development of lessions, necrotic areas, chlorosis was also observed.

In moist and cool, humid condition disease spread very fast than warm condition. In later condition disease, spread over petiole, stem and fruit also Disease develop in 6 to 7 week of after Sown.

3.4 Fruit Rot -*Phytophthora, Fusarium*

The disease first observed after heavy rain, Fruits near the soil got infection soon.

Woolly, Cottony growth of fungus on fruit were recorded, the skin become soft, water soaked, light brown in colour.

3.5 Powdery Mildew of Tomato -*Erysiphe polygoni*

The fungus was obligate parasite the disease appears as, powder like or white, amorphus flour like spots, firstly on lower surface thin on upper surface. Some researcher completed their work over tomato crop. Singh N.I. and Devi S.P.(1989) [2] Muley J.R. (2002) [3]Patel S I (2008) [4] A.H. Wani (2011) [5] D.S. Gughe (2016). [6] M.K. Naik and Poonam Sinha (1996)- researchgate.net /267228078-[7]

3.6 Anthracrose: *Collectotrichum phomoides*

Disease appeared as sunken spots on the fruit.

I) Early blight of Tomato

Causal organism: *Alternaria Solani*

II) *Late Blight of Tomato*:

Causal organism : *Phytophthora infestans*

III) *Leaf spot of tomato* :

Causal organism : *Alternaria solani*

V) *Fruit Rot*:

Causal organism : *Phytophthera purasitica Dust*

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VI) Anthracrose:

Causal organism : *Collectotrichum phomoides*

IV. CONCLUSION

It is observed that, disease appear in the field when climatic condition was favorable for disease development e.g. moist, wet and humid conditions were favorable for disease development. Growth stage of tomato crop also affects the disease development. High rainfall along with high humidity was key factor for disease development. Plant debris, remains of pervious plant part also influence the diseases, warmer and high temperature conditions slow down the disease incidence.

REFERENCES

[1]. H.S.S.C. Stella Coakleg," Climate change and plant Disease management" Annual Review phytopthol. vol.37, pp. 399-426, 1999.

[2]. Singh N.I. and Devi S.P. Aerobiology and Crop disease in Manipur VI fungal airspora over a tomato field in Imphal district. 6th National aerobiology Conference. Abs. (991: 14.9.)

[3]. Muley, J.R. 2002. Fungal airspora of Tomato field and epidemiology of it's foliar diseases, Ph.D. Thesis, Swami Ramanand Teerth Marathwada University,Nanded.

[4]. Patel S.I. Effect of Rainfall on dissemination of airborne cladosporium link. spores over Tomato field at Nashik (M.S.). India. Geobios 2008; 35: 233-236.

[5]. A.H. Wani. An overview of the fungal rot tomato. Mycopath 2011; 9(1): 33-38.

[6]. B.S. Gughe 2016. Early blight disease of tomato

[7]. Epidemiology of early blight of Tomato M.K. Naik and Poonam Sinha. research gat: Jan. 1996 pnb/267228 078.

[8]. Ravishankar e*t.al*. A practical Guide to identification and control of tomato Diseases.

[9]. Rangaswami -Text book of plant pathology.