

# To study the effect of different humidity level on dry weight of *Fusarium oxysporium*, *Rhizoctonia solani* and *Alternaria solani*

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**Abstract:** The seedlings of different vegetables were collected in sterilized polythene bags from different sites in Beed in the year 2018 from January 2018 to December 2018 for the study of effects of humidity on the growth of fungi, isolation of fungi from the vegetables and dry weight of fungi. The mycoflora was isolated by food poisoning technique on P.D.A. (Potato Dextrose Agar) medium. The pathogenecity was tested according to Koch's postulates. There was variation in the mycoflora according to the type of Vegetables. The common fungi were *Fusarium oxysporium*, *Rhizoctonia solani* and *Alternaria solani*. There was highly significant difference in the growth of *A. Solani*, *Fusarium oxysporium* and *Rhizoctina solani* at different humidity level maximum growth of these fungi was observed at 90% humidity that was *Alternaria* 105 mg *Fusarium* 131 mg and *Rhizoctonia* 151mg .Followed by 50 % , 30% and 05 % humidity and least growth was obtained at 30 % humidity was *Alternaria* 22 mg, *Fusarium* 35 mg and *Rhizoctonia* 22 mg. The result of study indicated that the growth of fungi was high at humidity 90 % and was least at 30 % humidity. Therefore humidity is most important environmental factor for regulate vegetative and reproductive activity of fungi in the present study on the influence of humidity the maximum growth was at 90 % humidity.

**Keywords:** Vegetables, fungal spore and humidity.

## Introduction

Vegetable is recognized as an essential diet with its nutritional and medicinal value, having full of sources of vitamins and minerals. India has securing the second positions in the world with total production of vegetables are more than 91million tons in the country.

Though the productivity of vegetable per unit area is very low, that means the vegetable in India are produce on small scale and raised with principles of intensive farming, which leads to disease infection specially fungal infection.

Vegetable's either raised directly or through transplanted seedling get infected by variety of biotic, and abiotic causes. Vegetable seedlings are suffered from number of diseases caused by species of fungi, bacteria, viruses and nematodes. Among this fungal pathogens play important role in reducing yield and quality in vegetable crops.

Each vegetable seedling may be susceptible to several species and due to multiple soils born pathogen which persistent in soil for long period's symptoms of the seedling disease complex appears as patches emergence during the four weeks following seedlings, or up to the four leaf stages. Seedlings diseased damage contain seeds decay that is seed fail to germinate and become soft and pulpy and pre-emergence damping- off i.e. seed germinate but the developing seedling decay and fail to emerge sometime seedling could turn to seedling blight, wire stem or post emergence damping-off and even seedling root rot occurs.

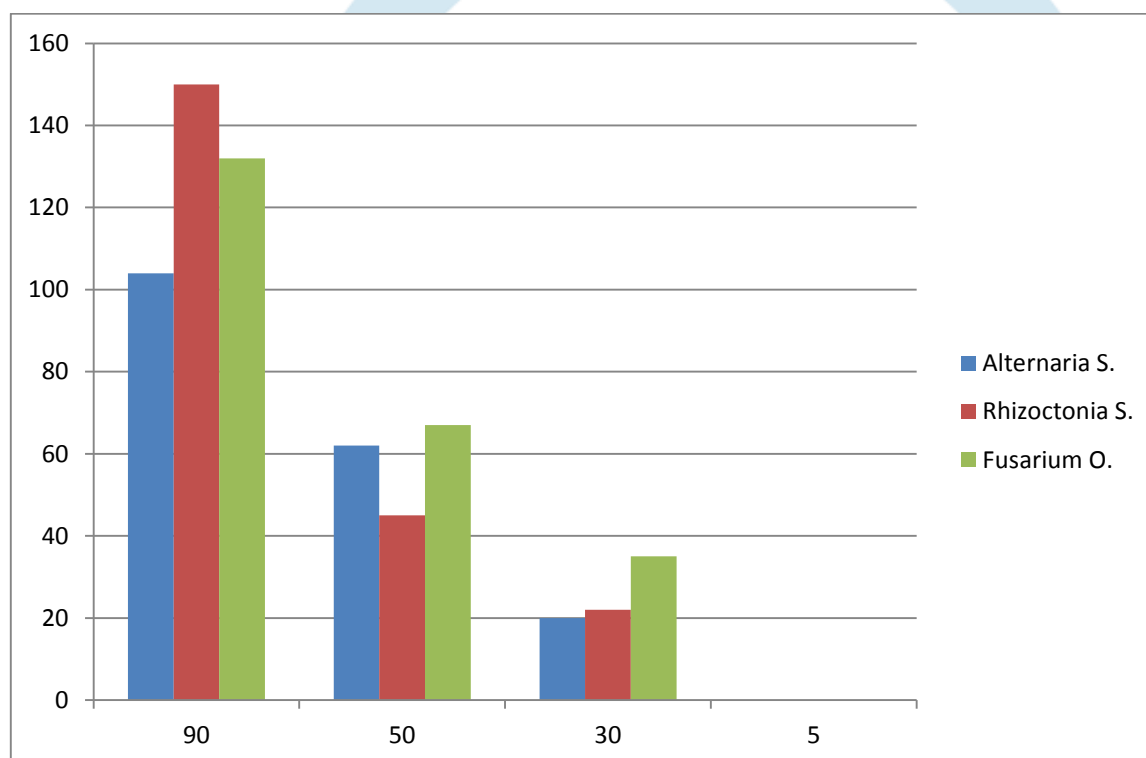
## Methodology

The seedlings of different vegetables were collected in sterilized polythene bags from different sites beed in the year 2018 from January 2018 to December 2018 for the study of effects of humidity on the growth of fungi. The diseased vegetables were collected separately in polythene bags to avoid contamination. The symptoms were carefully noted; completely rotten vegetables were avoided for isolation as they contained mostly secondary pathogens. If vegetable were present on the infected portions, slides were prepared by scraping the diseased portions. Isolations were made from the juncture of healthy and diseased regions on the peel of the infected vegetables. The diseased tissues were surface sterilized with 90% ethyl alcohol and transferred aseptically to Potato dextrose agar medium [200g Potato, 15g Dextrose 15-20 g Agar-agar and 1000 ml of distilled water] slants. After 8 to 10 days the hyphal tips coming out of the infected tissues were transferred to fresh slants. The fungi were identified with the help of standard monographs. Effect of the growth of fungi on different humidity level was also noted.

**Result**  
Table No.1

Effect of different humidity level on dry weight of *Alternaria solani*., *Rhizoctonia solani* and *Fusarium oxysporum*

%	Humidity	Dry Weight in mg		
Sr.No.		<i>Alternaria solani</i>	<i>Rhizoctonia solani</i>	<i>Fusarium oxysporum</i>
1	90	105	151	131
2	50	61	46	67
3	30	20	22	35
3	05	00	00	00



There was highly significant difference in the growth of *A.solani*, *Fusarium oxysporum* and *Rhizoctonia solani* at different humidity level maximum growth of these fungi was observed at 90% humidity that was *Alternaria* 105 mg *Fusarium* 131 mg and *Rhizoctonia* 151mg .Followed by 50 % , 30% and 05 % humidity and least growth was obtained at 30 % humidity was *Alternaria* 22 mg, *Fusarium* 35 mg and *Rhizoctonia* 22 mg. The result of study indicated that the growth of fungi is high at humidity 90 % and least at 30 % humidity. Therefore humidity is most important environmental factor for regulate vegetative and reproductive activity of fungi in the present study on the influence of humidity the maximum growth was at 90 % humidity.

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