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Effect of Carbon Sources on Some Disease Causing Fungi on Tomato Plant in Marathwada Region

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Abstract: ***During our survey it revealed that the crop tomato suffers with various fungal diseases. However the incidience was found more during rainy season. Pathogenic fungi like 1. Phytophthora rubra 2. Fusarium oxysporium 3. Alternaria alternate 4. Fusarium saloni 5. Rhizoctoniasolani 6. Cladosporiumfulvum 7. Curvularia lunata 8. Aspergillusflavus 9. Aspergillusniger 10. Macrophomina phaseolina were given the treatment of carbon sources individually. It was observed that the growth of fungi increases as compared to control during the effects of sources.***

Keywords: Fungal, Carbon, Marathawada, Tomato

1. Introduction

Tomato (*Lycopersicum esculentum* Mill.) is the second most popular and widely grown vegetable in the world after potato (**Panthee and Chen 2010**). A trend is set up for commercial cultivation of tomato (**Chadhab2008).** The production of this crop has tremendously increased due to its multifarious uses in raw, cooked and processed forms as soups, sauces, ketchups, preserves and pickles (**Tiwari and Choudhary, 1986).** The crop tomato is cultivated on large scale in the region of Maharashtra and also some parts of Marathwada. Tomato is a vegetable crop very prominently cultivated on irrigated land almost throughout the year, assisted to various types of diseases including fungal, bacterial, viral. However these present studies concentrate more on fungal diseases and the effect of carbon sources on its growth.

2. Material and Method

A disc (0.5cm diameter) of mycelia and spores was taken from the periphery of 7days old cultures of fungus grown on PDA medium was inoculated into 250ml conical flasks, each containing 100 ml of Glucose nitrate broth. This basic medium served to check the growth of fungi as control. The basic medium was altered by different carbon sources such as **Dextrose, CMC, Starch, Fructose**. The flasks were allowed to incubate at room temperature for 15 days and filtered using whatsman filter paper no.40. Dry mycelium weight was measured.

3. Result and Discussion

The revealed that the growth of all fungal isolates increased when compared with control. The results are displayed in the table below.

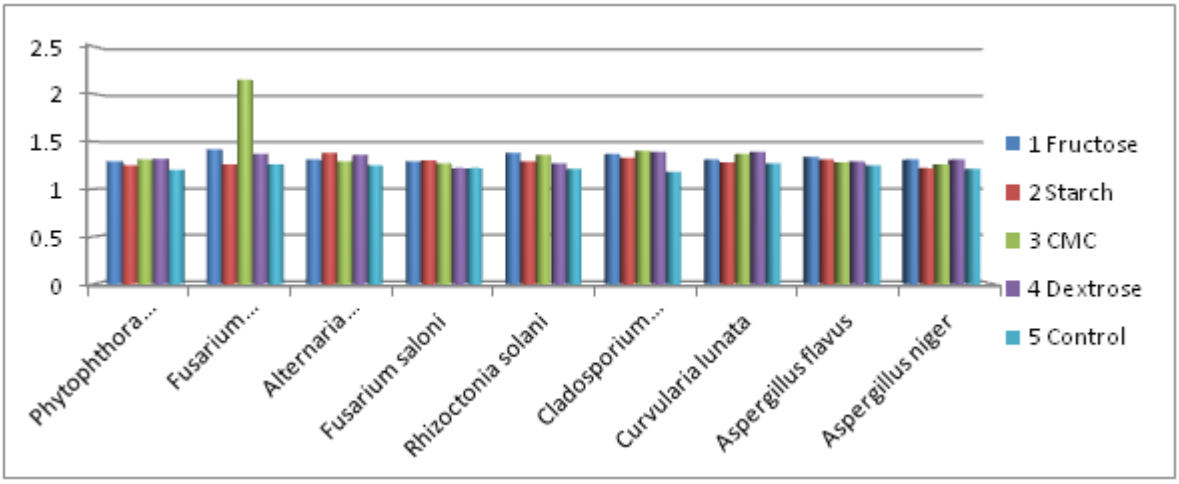
Where,

1. *Phytophthora rubra* 2. *Fusarium oxysporium* 3. *Alternaria alternate* 4. *Fusarium saloni* 5. *Rhizoctoniasolani* 6. *Cladosporiumfulvum* 7. *Curvularia lunata* 8. *Aspergillusflavus* 9. *Aspergillusniger* 10. *Macrophomina phaseolina*.

Effect of Carbon Sources on Growth of Test Fungi of Tomato

Dry Wt (gm)

Sr. No	Carbon sources	1	2	3	4	5	6	7	8	9	10
1	**Fructose**	1.29	1.42	1.31	1.29	1.38	1.37	1.31	1.34	1.31	1.27
2	**Starch**	1.25	1.26	1.38	1.3	1.29	1.33	1.28	1.31	1.22	1.27
3	**CMC**	1.31	2.15	1.29	1.27	1.36	1.4	1.37	1.28	1.26	1.3
4	**Dextrose**	1.32	1.37	1.36	1.22	1.27	1.39	1.39	1.29	1.31	1.35
5	**Control**	**1.2**	**1.26**	**1.25**	**1.22**	**1.21**	**1.18**	**1.27**	**1.25**	**1.21**	**1.24**
6	**Mean**	1.274	1.492	1.318	1.26	1.302	1.334	1.324	1.294	1.262	1.286
7	**S. D.**	0.05	0.37	0.05	0.04	0.07	0.09	0.05	0.03	0.05	0.04
8	**S. E.**	0.02	0.17	0.02	0.02	0.03	0.04	0.02	0.02	0.02	0.02
9	**C. D.5 %**	0.06	0.46	0.07	0.05	0.09	0.11	0.07	0.04	0.06	0.05
10	**C. D.1 %**	0.1	0.77	0.11	0.08	0.14	0.19	0.11	0.07	0.1	0.09



Effect of carbon sources like fructose, dextrose, starch, CMC on the test fungi were mention in table. It is very clear from the result that fructose and sucrose enhanced the growth of all test fungi. The same results are revealed by **Pande and Shukla (1978).** They observed good growth of *Helmintho sporiumon* sucrose.

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