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Research Article

EFFECT OF COPPER OXYCHLORIDE AGAINST DEVELOPMENT OF TUBER ROT

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ABSTRACT
Potato *(Solanum, tuberosum)* is an important nutritive food crop and cultivated all over the world. It gets affected by various pest and diseases, among these, fungal pathogen is the important one. The potato gets affected by *Sclerotium rolfsi* and cause tuber rot. Due to disease development heavy economic loss occurs. For the control of this disease different fungicides were tested against *Sclerotium rolfsi* the fungicide like copper oxychloride was found effective against fungal growth causing tuber rot of potato.

Keywords: *Tuber Rot, Fungicide Copper Oxychloride*

INTRODUCTION
Potato is an important edible food crop, it contain high calories, rich in carbohydrates, quality protein, dietary fibers and act as a balance nutritive food. Quality of potato protein is comparable to egg and milk, therefore superior to those present in cereals pulses and vegetables. In the highly populated areas of India potato is an important food supplement (Singh, 1999 and Praharaj *et al.*, 2006).
Potato is an important part of cotton industries for sizing the clothes, paper industries, production of alcohol, adhesives etc. (Chaddha, 1996). In view of above properties it has been a permanent solution of 21st century's major problems like hunger, malnutrition and unemployment (Khurana, 2006; Shekhawat and Naik, 1999). Various pests and microbes including fungi affect such important crop.
The Tuber rot is caused by fungi *Sclerotium rolfsi,* caused by faulty handing, during transportation and poor storage conditions (Boyd, 1972; Smith *et al.*, 1987; Khurana and Chandra, 1980; Soman, 2004).
The present investigation has been carried out to control the Tuber rot by application of fungicides such as copper oxychloride.

MATERIALS AND METHODS
The efficacy of different fungicides was tested by using potato slice (Solunke, 1989; Wakle and Kareppa, 2000.)

Table 1: Effect of C*opper oxychloride* on percent control efficacy of *Sclerotium rolfsi*

Concentration ug/ml	***Percent control efficacy (PCE)*** ***Incubation Period (Days)***							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
100	81.34	74.34	61.47	53.66	43.36	36.83	24.72	13.86
200	82.96	76.33	65.84	55.26	46.39	39.47	30.82	16.22
300	83.36	79.46	68.32	58.75	50.63	42.86	33.90	21.76
400	84.26	82.53	71.47	63.93	55.34	46.96	37.88	27.36
500	85.38	84.32	75.62	66.47	60.38	50.39	41.93	33.86
600	86.13	82.43	78.68	70.32	65.47	56.69	47.86	39.94
700	86.83	84.59	81.50	75.73	70.89	66.80	53.36	45.68
800	87.43	87.00	85.98	80.49	75.68	72.74	58.83	50.00
900	100.00	100.00	100.00	100.00	100.00	74.93	60.34	55.30
1000	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
SE=±	1.58	1.54	1.37	1.22	1.56	1.46	1.13	1.71
CD = 0.01	7.83	7.60	6.78	6.04	7.69	7.22	5.61	8.46
CD = 0.05	5.23	5.10	4.53	4.04	5.16	4.83	3.74	5.66

Potato slice of 75 mm diameter and 10 mm thickness were prepared. The various concentrations of copper oxychloride were prepared on the basis of active ingredients i.e. 100 to 1000 micro grams per milliliters.

The slices were dipped in different concentrations of copper oxychloride for five minutes. Sterilized distilled water was used as control. A 5mm mycelial mat of *sclerotium rolfsi* was inoculated aseptically at the center of slice.

The plates containing potato slice were incubated at room temperature in laboratory during incubation period. The linear growth of *Sclerotium rolfsi* was measured at 24 hour interval for 8 days. The result was presented in the form of percent control efficacy (PCE) (table 1).

RESULTS AND DISCUSSION

Results

The sensitivity to different fungicides was tested against *Fusarium, Sclerotium rolfsi* causing tuber rot of potato (Datar and Mayee, 1985; D'e and Sengupta, 1992; Kareppa and Gangawane, 2001).

Copper oxichloride at 1000 micrograms per liter concentration showed highest growth of inhibition, at this concentration 100 % growth of *Sclerotium rolfsi* was observed.

Therefore it can be concluded that 1000 micrograms per liter concentration of copper oxichloride is most effective in controlling the growth of *Sclerotium rolfsi* causing tuber rot.

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