Open Access

SCHOLARENA

Journal of Advancements in Plant Science

RESEARCH ARTICLE

ISSN: 2639-1368

Sensitivity of Botrytis Cinerea towards Carbendazim Causing Gray Mold Fruit Rot Disease of Strawberry *(In-Vitro)*

AAJagtap, SD Sorate*, SS Kambland MS Desai

[1]*Department of Botany, Sharadchandra Pawar Mahavidyalaya, Lonand Dist. Satara (MS)*

[2]*Plant Pathology Research Laboratory, Dahiwadi College Dahiwadi, Dist. Satara (MS)*

[3]*Department of Botany, Karmaveer Hire College, Gargoti Dist. Kolhapur (MS)*

***Corresponding Author:** AAJagtap, Department of Botany, Sharadchandra Pawar Mahavidyalaya, Lonand Dist. Satara (MS), Tel.: 09890778246, E-mail: anildada11@gmail.com

Citation: AA Jagtap, SD Sorate, SS Kambland MS Desai (2024) Sensitivity of Botrytis Cinerea towards Carbendazim Causing Gray Mold Fruit Rot Disease of Strawberry (In-Vitro), J Adv Plant Sci 6: 102

Introduction

Strawberry (*Fragaria* x *ananassa* Duch.) is belonging to family Rosaceae native of temperate regions. Some varieties of strawberry can be cultivated in subtropical areas. The worlds 86 countries are engage in the cultivation of strawberry and they produce 3.113 metric tons (6.9 billion pounds) of Strawberry [1]. In India it is cultivated in Nainital, Dehradun, Mahabaleshwar, Kashmir valley and Bangalore. Now strawberry is cultivated around Pune, Nashik and Satara districts.

Strawberry fruit contains total solid, total soluble solids, total sugars, reducing sugars, sucrose, fructose, glucose, pectin's, citric acid, malic acid, ascorbic acid and anthocyanin's. [2]. Strawberry fruit is very delicious having good source of Vitamin C and used for making the ice-cream. Fruit also shows antioxidant property. Such an economically important fruit crop affected more than 50 different genera of fungi including *Botrytis cinerea*, *Colletotrichum* spp., *Verticillium* spp. and *Phytophthora* spp.[3].

The gray mold fruit rot caused by *Botrytis cinerea* (Pers.: Fr.). It is most destructive disease of causes 25% loss of strawberry and reduce the yield and postharvest quality of fruits. The present research work was carried out to study sensitivity of *Botrytis cinerea* against Carbendazim (*In-vitro*).

Material and Methods

Samples of strawberry showing grey mold fruit rot were collected from different localities of Satara district. From these samples 10 isolates of *Botrytis cinerea* were obtained and sensitivity of pathogen against Carbendazim were determined by food Poisoning test [4]. Czapek Dox agar medium plates were prepared containing different concentration of Carbendazim in triplicate.

A disc (8mm) with fungal culture was obtained from the margin of an actively growing colony and placed upside down on the agar surface. The agar plates without fungicide concentration served as control. The plates were then incubated at 26 ± 2 ° C in dark and linear growth was measured at different intervals.

Result and Discussion

There was large variation in sensitivity/MIC of Carbendazim among 10 isolates on agar plates MIC ranged from 50 and 800 µg/ml these results showed in Table 1. The results are in agreement with Gangawane and Kamble [5] observed that there was variation in MIC of Carbendazim among 12 isolates of *Macrophomina phaseolina* causing charcoal rot of potato tubers. Hiwale [6] reported that 18 isolates of *Sclerotium rolfsii* causing fruit rot of cucumber showed variation in MIC of Carbendazim. Apte and Kamble [7] observed variation in MIC of Carbendazim among 5 isolates of *Alternaria ricini* on agar plates and on castor leaves. According to Jagtap and Kamble [8] there was variation in MIC of Carbendazim against 12 isolates of *Sclerotium rolfsii* causing rhizome rot of turmeric.

Table 1: Sensitivity of *Botrytis cinerea* against Carbendazim causing grey mold fruit rot of Strawberry

Sr.no.	Isolates	Locality	Mean Linear growth (mm)	MIC (µg/ml)
1	BC-1	Mahabaleshwar	9.66	600
2	BC-2 (S)	Khatav	9.33	50
3	BC-3	Koregaon	9.33	100
4	BC-4	Medha	9.33	550
5	BC-5	Satara	9.66	350
6	BC-6	Pangari	10.33	500
7	BC-7	Panchgani	9.66	650
8	BC-8 (R)	Bhilar	9.33	800
9	BC-9	Machutar	9.66	600
10	BC-10	Jalgaon	9.66	150

Conclusion

There was variation in sensitivity among the 10 isolates of *Botrytis cinerea* against Carbendazim on CDA medium. Sensitivity on agar plate's ranges from 50 to 800 µg/ml. Isolate BC-2 collected from Khatav was sensitive while BC- 8 collected from Bhilar was resistant showed 50 and 800 µg/ml sensitivity towards Carbendazim respectively. These data will be help in the effective management practices against grey mold fruit rot disease of strawberry. This work definitely brings down the management cost of fruit rot disease and increase the yield and postharvest quality of strawberry.

References

1. Jadhav MT (2013) A study of cultivation and marketing of strawberry in Satara district, 29-48.

2. Kader AA (1991) Quality and its maintenance in relation to the postharvest physiology of strawberry in to the 21 st Timber Press, Portland, Oregon.

3. Garrido C, Carbu M, Farnandez-Acero J, Jonzalez- Rodriguez VE, C Antoral JM (2011) New insights in the study of Strawberry fungal pathogens. Genes, Genomes and Genomics.

4. Dekker J, Gielink AJ (1979) Netherland J. Plant, Pathol, 85: 67-73.

5. Gangawane LV, Kamble SS (2001) In Frontiers in fungal biotechnology and Plant Pathogen relations", Allied Publishers Ltd., Hyderabad, 58-62.

6. Hiwale DK (2003) Studies on management of Sclerotium rolfsii. Sacc. Fruit rot of Cucumis sativus L. in Maharashtra, Ph D Thesis, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS)

7. Apte AR, Kamble SS (2008) Sensitivity of Carbendazim against Alternaria ricini causing leaf blight of castor. Bioinfolet, 5: 73.

8. Jagtap AA, Kamble SS (2010) Efficacy of Carbendazim against Sclerotium rolfsii causing rhizome rot of turmeric. Bioinfolet, 7: 57-8.