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MANAGEMENT OF POST HARVEST FRUIT DISEASES OF ZYZYPHUS

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Abstract

Survey of post-harvest disease of fruits was made. It was noted that the fruits are Infected with Aspergillusniger, Fusarium oxysporium,Rhizophus slonifer,Alternaria Species and Cercospora species. The Aspergillusniger was found to be on maximum Number of Ber verities and hence its sensitivity tested against Benomyl. There was Variation in the sensitivity in different isolates. The most sensitive isolate indicated The MIC 10/mg/ml on agar plates and also on the fruits.

INTRODUCTION:

Now a days cultivation of Ber is increased in Maharashtra, different verities have also Been recommended for the good quality of Ber not only in Maharashtra but also Through the country, prevalence of variable agro climatic conditions allow the Cultivation of almost every kind of fruit in india. Ber(Zyzyphus) commonly called as the poor mans fruit, fruit is Drup that is cultivated extensively in the northern, central and western states of India.its cultivation has been possible both in the arid and semiarid regions and recently even on saline of alkaline soil (Dahiya and Dhankar,1984) There by raising the aera, under production and proportionally the annual yield.

MATERIAL AND METHOD:

Diseased sample were collected in sterilized bags at regular intervals from whole salers, retailers and consumers.isolation were made within 24 hours of their placing collection isolation of pathogen on the culture media in pertidish plated with sterilized Czapek-Dox Agar medium.(CDA).

Identification and maintence of fruit disease:

Fungal pathogens were identified on basis of their macro and micropathological Characters using the relevant literature and keys of pitt 1979 and Sutton 1980 Preservationand maintenance of identified isolate was done as recommended by The international mycological institute(Smith and Oniions,1983) Check the pathogenicity of the isolates on

different varieties for these test freshly harvested fruits of similar size and approximate maturity were surface sterilized with 90% alcohol and then inoculated with Aspergillusniger by pin-prick method (Tomkins And trout 1931).Inoculum used in each case was one week, after inoculation the fruits Were placed in sterilized glass chamber maintained at 28 degree Celsius and 100% Relative humidity for one week of incubation.

Experimental result Result:

Benomyl, Diathane Z-78 ,Mancozeb ,Kerathane ,Ridomil,and Tridemorph were used in this study .All the fungicides indvidully showed their PCE more than 52.8. The higher concentration increased PCE up to70.4.among these fungicides Benomyl ,Diathane Z-78.,Mancozeb and Kerathane were more effective than other fungicides .But when thecarbendazim was mixed in these fungicides ,the PCE was again increased. The higher increase of PCE was seen due to combination of Tridemorph followed by Kerathane,Diathane Z-78.,Mancozeb and Benomyl in decreasing order. (Table No.1,and Fig. No.1). At the end of the incubation period check of the percentage disease index (PDI) was caculated Carbendazim gave significantly lower percentage disease index. Sensitivity of isolates against Benomyl and other chemicals was tested, there was Variation in the sensitivity in different isolates of Aspergillusniger the most sensitive Isolates indicated the MIC 10mg/ml. on Agar plates and also plates on fruits

Table No.1: Percentage Control Efficacy (PCA) of Carbendazim individually and in Mixture with other fungicides against resistance strain mutant (AN EMS-9) OF Asergillusniger on fruit of Ber.

Sr.No.		PCE
Fungicides (mg/ml)	----------	
Individual	In mixture with	
Carbendazim.		
1. Benomyl		
50	58.4	67.2
100	68.8	70.8
2. Diathane-z-78		
50	58.0	70.4
100	71.2	74.0

3. Mancozeb		
50	58.8	62.4
100	70.4	71.2
4. Kerathane		
50	59.2	62.8
100	70.8	75.2
5. Ridomil		
50	55.2	56.8
100	58.0	72.8
6. Tridemorph		
50	52.8	68.4
100	58.8	79.2
7. Carbendazim only (2.5m/ml)	54.8	--
Carbendazim only (2.5m/ml)	54.8	--

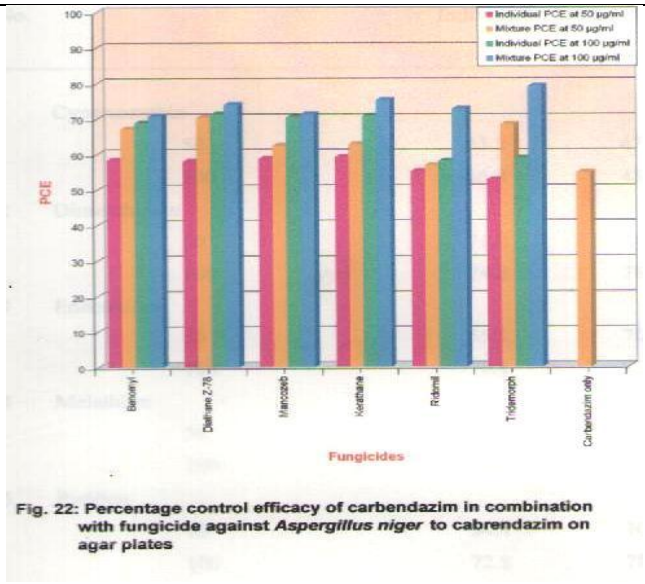

Fig. 22: Percentage control efficacy of carbendazim in combination with fungicide against *Aspergillus niger* to cabrendazim on agar plates

Discussion :

Use of chemical individually or in combination with carbendazim appeared in to be more beneficial for managing this fruit rot in present investigation. Benomyl,Diathane z-78,Mancozeb, Kerathane , Ridomil and Tridemorph gave higher percentage control efficacy individually.

But carbendazimin mixture with these chemicals enhanced the percentage control efficacy for controlling this disease investigation Use of fungicides in combination have been

suggested for the management of the level of fungicide resistance in pathogen(Dekker,1981) with the combination of two specific site inhibitors the possibility exist that the pathogen will acquire resistance to both compounds. This would be less likely happen if a combination is used of a systemic fungicides and multisite inhibitor. These results are also confirmative with findings of earlier workers (Dekker, 1981.) Toprevent, a further case of resistance, Ciba-Geigy has adopted a basic strategy of the prepact mixture of metalaxyl with Mancozeb against Oomycetes (Staub and Sozzi, 1981.). In addition (Raju and Rao, 1985) have found that combined application of Diathane-M-45. With different insecticides' can control the fruit rot and pest complex on chilli. (Gangawane and Reddy, 1986.) Showed that certain micronutrients when used singly or in mixture with carbendazim reduce resistance in *Aspergillusniger* singly or mixture with carbendazim reduce resistance in *Aspergillusflavus*. There are theoretical models developed in this basis.(Kable and Jaffery,1980;Skylakakis,1981;Levy et. al.,1983) and practical examples (Delp,1980;Dekker,1981;Gangawane and Shaikh,1988; Gangawane et.al.,1990.).(Gangawane L.V. and B.R.C.Reddy,1985).(Gangawane L.V.,1981.) Dekker,1981. Suggested that there is a significant delay of resistance build up in the pathogens when mixture of different fungicides have been used. In the present study agrochemicals other than fungicides have also been proved useful in the management of carbendazim resistance in *Aspergillusniger* causing fruit rot of *Zyzyphus*.

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