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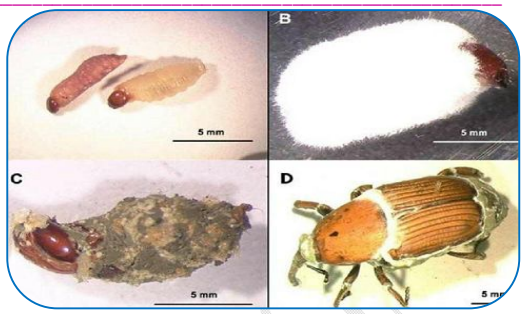
THE CONSEQUENCE OF *METARHIZIUM ANISOPILAE* ON CABBAGE PEST

Miss . Komal Sanjay Sonawane and
Miss. Shital Ganesh Powale
Bhairavnath Vidnyan Mahavidyalay Khutbav,
Tal –Daund Dist –Pune.



ABSTRACT :

Metarhizum anisopliae known as Entomopathora anisopliae. This grows naturally in soil throughout the world & cause disease by the fungus is called "Green muscardine disease" because green colour of this spores. The fungal concentration increase and the time increases the mortality of the larvae increase . Maximum mortality was seen at 3.5ml at 48hour. Cabbage pest –cabbage looper,cabbage aphid, cabbage maggots are found .The fungus Metarhizium anisopliae grow on PDA medium. site of collection of agriculture filed at cabbage farm at Mulshi, dist – pune .

KEYWORDS : *M.anisopilae, pesticides, medicinal.*

INTRODUCTION

Cabbage (Brassica oleraceavar. Capitata L.) is an extensively grown vegetable in the world, its among the most popular food crops; it grow well in many apart of county (Legwailaet al.,2014) Head cabbage (Brassica oleraceavar. Capitata L.) was the most suitable host with the shortest developmental period and the highest reproductive potential (Ayalew et al.,2006). Vegetable are high value of crop and the use chemical pesticides is intensive due to severe yield losses by insect pests and diseases under tropical condition in India or other country. Cabbage is an extensively grow vegetable in the world it is among the most popular food crop it grow well in many parts of country. *Metarhizium anisopilae* known as entomophthora . This grows naturally in soil throughout the world & cause disease caused by the fungus is called "Green muscardine disease " because green color of its spores.

CABBAGE PEST-

1.Cabbage looper : watch for cabbage looper particularly on the underside of leaves along leaf margins, but they can be found anywhere on the plant. The larvae are light green in colour white stripe down the back .The body taper toward the head. There are three pairs of club shape prolegs toward the other end. When mature, the larvae reach 1-1/2 inches in length. The ridged, white, round eggs are usually laid singly on the underside of the outer leaves.

2. cabbage aphid : Aphids of any of several species present either dead or alive in sufficient numbers to reduce the marketability of cabbage. The pale – green cabbage aphid looks like other aphids but with a grayish waxy coat similar to cigarette ash. These aphids infest the underside of leaves and suck sap. Infected plants may show signs of curling, wrinkling, or cupping of the leaves. Some plants may be stunned and produce unmarketable head.

3. cabbage maggots : Eggs are deposited at the base of plants or crevices in soil. The white, legless maggots feed or burrow into the roots an stems of the plant. They are blunt at the rear and pointed toward the head.

METHODS AND MATERIAL

Site of collection –

Infected cabbage are collected from Disali village, tal- Mulshi dist- pune . larvae are collected from infected cabbage then this larva used for experiment.

Chemical-

Dextrose(10gm) , potato influsion (100gm), Agar(10gm), conical flask, distilled water, autoclave, Petridish, 95% alcohol, tween 80,paper towel, forceps, plastic box, microscope, *Metarhizium anisopilae* fungus in powder form.

Method

Composition of potato dextrose agar – To prepare potato influsion boil 200gm sliced unpeeled potato in 1 liter. Distilled water for 30 min. filter through cheese cloth, saving effluent which potato influsion. Mix with dextrose agar , and water , and boil it to dissolve . Autoclave 15min at 21' c. PH 5.6 +/- 0.2 make a square 4 on the petriplate.

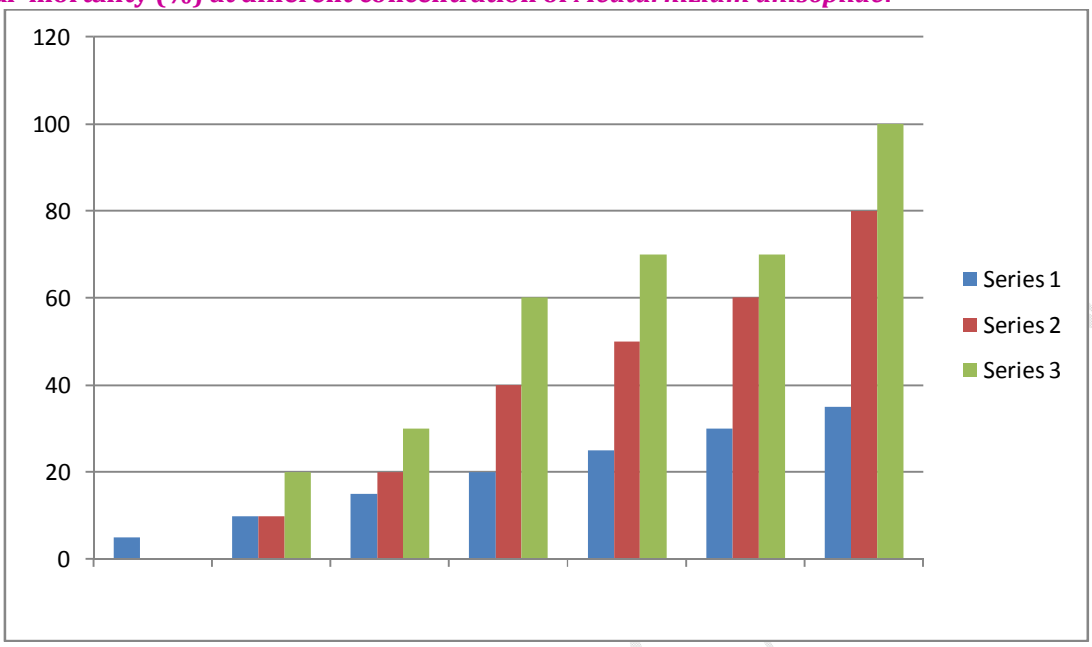
Composition of fungus spores- potato dextrose agar was prepared then fungus powder was spread over the PDA medium this medium was incubated . After incubation spores are formed in pertridish. Spore were harvested and spore dissolved in tween 80 then centrifuged at 800 rpm/144 gm for 5 min then supernatant was discarded. The pellet was collected and then in pellet add sterile distilled water as a concentration 5%,10%.15%,20%,25%,30%,35% respectively. Take ten larvae in peri dish then spray this fungus concentration solution in larvae. Then observe mortality after 24 and 48 hours.

Result & Discussion

Observation table of Larval mortality

Sr. No.	Fungus (ml)	Water (ml)	Fungus Con. (%)	Larvae	Mortality	
					24 hrs	48 hrs
1	0.5	10	5	10	0	0
2	1	10	10	10	10	20
3	1.5	10	15	10	20	30
4	2	10	20	10	40	60
5	2.5	10	25	10	50	70
6	3	10	30	10	60	70
7	3.5	10	35	10	80	100

Larval mortality (%) at different concentration of *Meatarhizium anisopliae*.



Series 1:- fungal conc.
Series 1:- 24 hour mortality
Series 3 :- 48 hour mortality

The fungal concentration increase and the time increases the mortality of the larvae increase . Maximum mortality was seen at thirty percent at forty eight hour. The fungus *metarhizum anisopliae* showed fast growth on a potato dextrose agar medium which exhibited a shorter fungal mat development period of fifteen day.

Cabbage is economically important but it has a lot of insect pests. The pest of the cabbage is high due to which it has to be stopped so that the pest of cabbage will be reduced.

CONCLUSION

In 5% fungus concentration mortality are observe zero percent at twenty four and forty eight hours. In 10% fungus concentration mortality are observe twenty percent at twenty four hours and twenty percent for forty eight hours .In 15% fungus concentration mortality are observe twenty percent at twenty four and thirty percent for forty eight hours. In 20% fungus concentration mortality are observe forty percent at twenty four and sixty percent for forty eight hours. In 25% fungus concentration mortality are observe fifty percent at twenty four and seventy percent for forty eight hours. In 30% fungus concentration mortality are observe sixty percent at twenty four and seventy percent for forty eight hours. In 35% fungus concentration mortality are observe eighty percent at twenty four and hundred percent for forty eight hours.

Larval mortality is increases at 35% fungus concentration as compared other fungus concentration.

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Miss . Komal Sanjay Sonawane
Bhairavnath Vidnyan Mahavidyalay Khutbav, Tal –Daund Dist –Pune.