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Fungi and Fungicide Crises- A Case Study of Fusarium Resistance to Mancozeb Fungicides

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Abstract

Fungi are achlorophyllous organism that can survive without sunlight as they lack the cholophyllous pigment that manufactures food for them as does plant. However they can survive on a substrate and grow on all kinds of remnant. They do this by secreting metabolites that digest their food. This fungi sometimes causes 70 % of the disease found on plant. Fusarium wilt is a tomato disease caused by Fusarium oxysporium fungi which causes dieing back and wilting of the crop.Fungicides are any agent mostly chemical that is used to control fungi diseases on plant. The Problem arose from the fact that Most farmers have been using Fungicides such as Mancozeb-for curbing plant diseases. These chemicals are toxic to both plants and man.Most fungicides or mancozeb are renowned for containing heavy metals such as Zn Cd and Pb. To ascertain its toxicity, an experiment on fusarium was tested for its resistance/ susceptibility on Mancozeb fungicide.In an ecofriendly approach with the aim of underscoring environmental Impact Assessment, most bioprinciples are encouraged,because we have come to realise the advantageous use of Bioorganism to control plant disease;that chemicals are detrimental to man and plant by affecting its photosynthetic capability,also that we need to dissuade the use of fungicides in cropping system.A PhD research thesis was conducted at the University of Ibadan where it was designed to grow or culture the organisms on fungicide containing PDA(Media).It was laid out in a CRD design pattern at 4 treatment levels(0, 0.25, 0.5 and 1)g levels,where 0 is the control and 0.5 recommended dose for mancozeb/fusarium (by NIHORT- research scientist,0.25g and 1g represents 1/2 of 0.5g (RD) and 2×0.5g(RD) respectively. It was found that the Fusarium oxysporium isolated (From a diseased tomato soil) and Isolated by Purification (In the Lab) eventually displayed resistance pattern at the heavily treated fungicide-PDA ammended media and eventually sporulated more than others eventually exhibiting tolerance and biomineralising the chemicals from the fungicide.Further results, pictures and statistical data are discussed in details in the body of the thesis and to be submitted journal in view of fungi and fungicide crisis relationship.

Keywords: Fungi Fungicides Fusarium Tomato Zinc, Heavy metals

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