ALTERNATIVES TO METHYL BROMIDE IN GRAIN FUMIGATION

SURVEY OF EAST AFRICAN PLANT EXTRACTIVES AGAINST SOIL PATHOGENS EG FUSARIUM OXYSPORUM

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ABSTRACT

This is a continuation of our work to find viable alternatives to Methyl Bromide in soil fumigation. In this regard a number of East African plants were selected for study. This selection is based on traditional knowledge of medicinal plants, which are widely used by different communities living in these parts. In the following table we show plant extractives with potential antifungal properties against Fusarium Oxysporum.

Table I

Name of Plant	**Plant Part Extracted**	**Inhibition Diameter (mm)**		
		1st Test	***2nd Test***	***Average***
Prunus African	Stem bark	7.0	6.0	6.5
Acacia meansii	Stem bark	6.0	5.0	5.5
Harrysonia abbysinica	Root bark	4.0	5.0	4.5
Erythrine abbysinica	Root bark	5.0	3.0	4.0
Conyzoides ageratum	Leaves	4.0	3.0	3.5
Melia azederach	Leaves	1.0	3.0	2.5
	Seeds	1.0	1.0	1.0
	Root bark	3.0	4.0	3.5
Chrysanthemum spp	Flowers	3.0	2.0	2.5

Four active compounds have been isolated from Prunnus Africana and Erythrina abbysinica, two each from each species. These have been bisassayed, and the results are shown in *Table I.* We shall report the structures of the two compounds and their biological activities.

Table II

Inhibition diameters of compounds from Erthrina abssinica and Prunus africana against Fusarium oxysporum and Alternaria passiflora

Compound	**Inhibition diameters (mm)**							
	Fusarium oxysporum				**Alternaria passiflorae**			
	1	**2**	**3**	**Av**	**1**	**2**	**3**	**Av**
P3	9.0	8.0	10	9.0	8.0	10.0	12.0	10.0
P5	7.0	8.0	6.0	7.0	7.0	8.0	9.0	8.0
E2	6.0	4.0	5.0	5.0	5.0	6.0	7.0	6.0
E3	3.0	4.0	5.0	4.0	5.0	3.0	4.0	4.0
E4	3.0	2.0	4.0	3.0	4.0	5.0	6.0	5.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

KEY: Cmpds - Compounds
Mm - milimeters
Av - Average
C - Control

The chemical structures of the five pure compounds are being evaluated and we shall report our findings.