

POTENTIAL OF ORGANIC AMENDMENTS FOR
ROOT-KNOT NEMATODE MANAGEMENT IN
BLACK NIGHTSHADE (*Solanum nigrum*)

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A22/0036/2007

PROJECT PRESENTATION-3RD JUNE,2011

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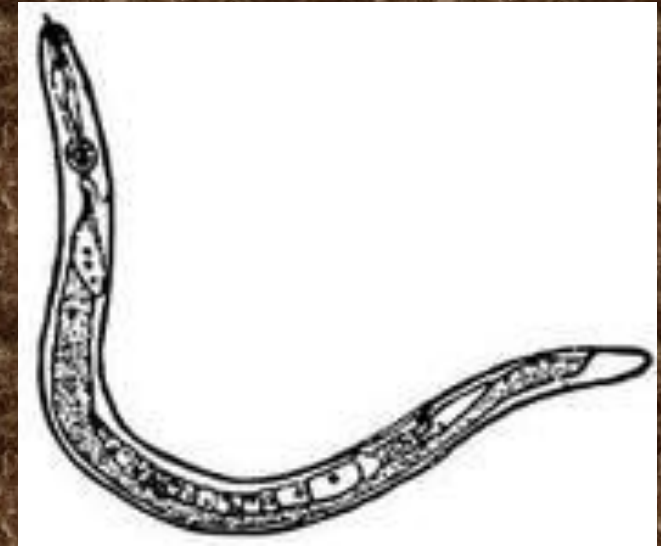
INTRODUCTION

- ❑ Black nightshade (*Solanum nigrum*), is a fairly common herb
- ❑ Used in combination with other ingredient in treatment of heart diseases
- ❑ Consist of minerals and vitamins such as iron, phosphorus, calcium, niacin and vitamin C.



African nightshade

□ Plant-parasitic nematodes are of great importance black nightshade causing yield losses amounting to 50%



□ Organic amendments are used as an alternative to chemicals in control of nematodes in vegetables



PROBLEM STATEMENT

- ❑ Nematodes cause significant yield losses and use of chemicals to control nematodes has numerous setbacks such as, environmentally unfriendly, non-selective killing beneficial organisms, expensive to acquire and harmful to human health

JUSTIFICATION

- ❑ Worldwide interest in alternative substances ,protection increased with the restriction of some conventional chemicals such as methyl bromide which is a broad spectrum fumigant hence use of the organic materials become a safer option for control of nematodes

OBJECTIVES

- ❑ To determine the damage on blacknight shade by nematodes
- ❑ To determine the effect of nematodes on the growth and weight of blacknightshade
- ❑ To screen the efficacy of selected organic amendments on *Meloidogyne* spp.

METHODS AND MATERIALS

- Naturally nematode infested soil was steam sterilized and then potted in 15cm diameter pots mixed in the ratio 5:1 with sand.
- Inoculation of nematodes in all potted plants was done after 14 days of sowing.
 - 1st treatment, Mexican marigold powder was added
 - 2nd treatment, Neem powder was added to soil

CONT'

- 3rd treatment, Jatropha powder was added to soil
- 4th treatment, combination of all powders
- 5th treatment, Bionematone was added to soil
- 6th treatment, Pochonia chlamydosporia was added to soil
- 7th control experiment, no treatment
- The experiment was terminated after 8 weeks and was done once
- After 45 days data was collected and subjected for further analysis
- Analysis of variance(ANOVA) was used.

Table 1. Effect of organic amendments on selected parameters

Treatment	Dry weight	Galling index	EMI	Height In cm	Juvenile count
Tagetes	2.73 c	3.67 b	3.17d	14.7b	143.3f
Neem	2.55 c	4.83 c	4.67c	15.1b	218.0d
Jatropha	4.67 a	4.5 c	3.17d	23.9a	196.7d
Mixture	3.76 b	5.33 d	2.67e	22.4a	180.0e
Bionematon	2.39 c	5.5 d	4.5c	13.5b	323.0c
Pochonia	2.41 c	5.33 d	4.67c	14.2b	330.0b
Control	1.80 d	8.17 a	7.33b	10.3b	790.0a
C.V%	18	38	20.5a	21.3	18
L.S.D	0.62	1.33	1.04	4.1*	69.2

Fig. 1. Effect of organic amendments on dry weight

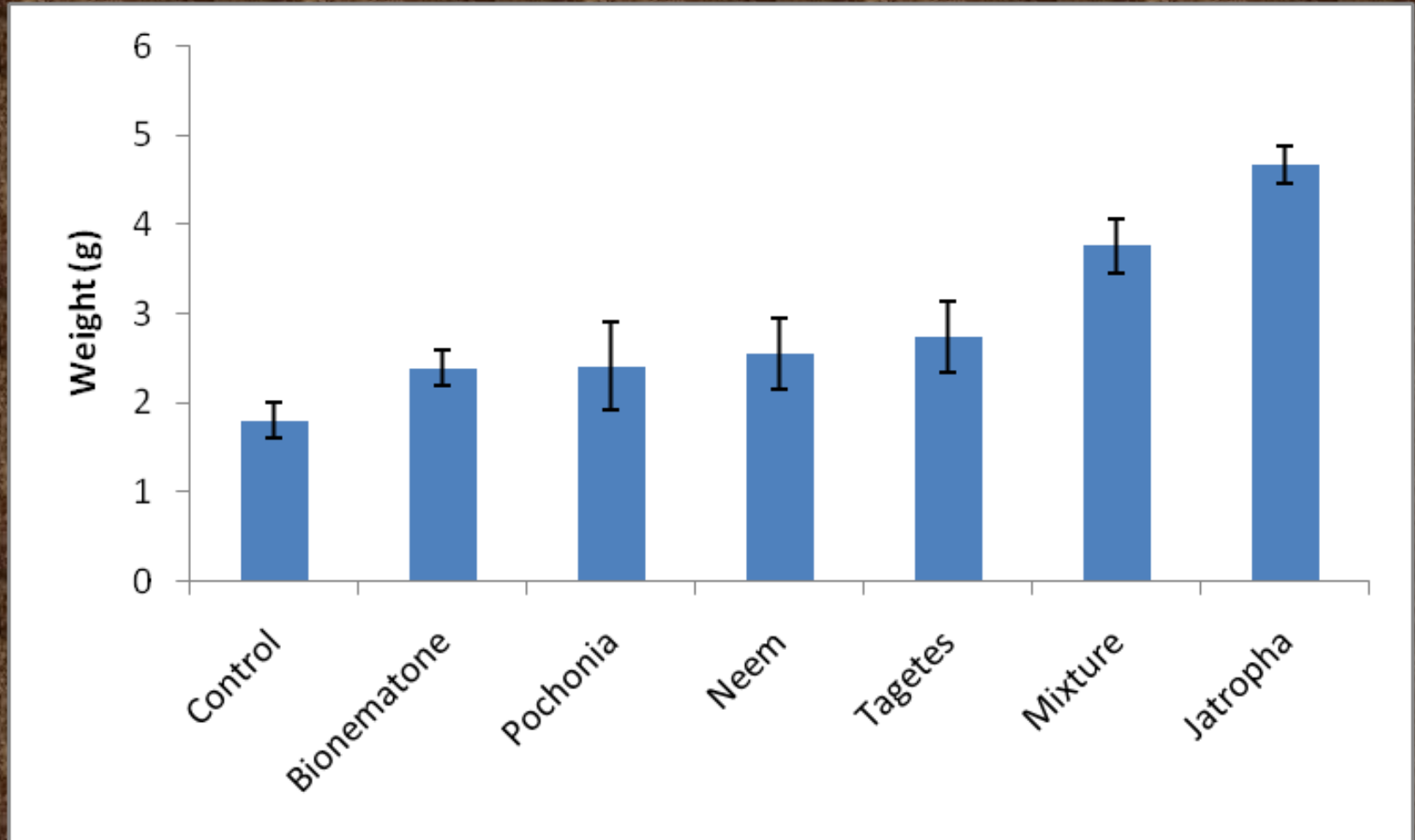


Fig. 2 Effect of organic amendments on galling

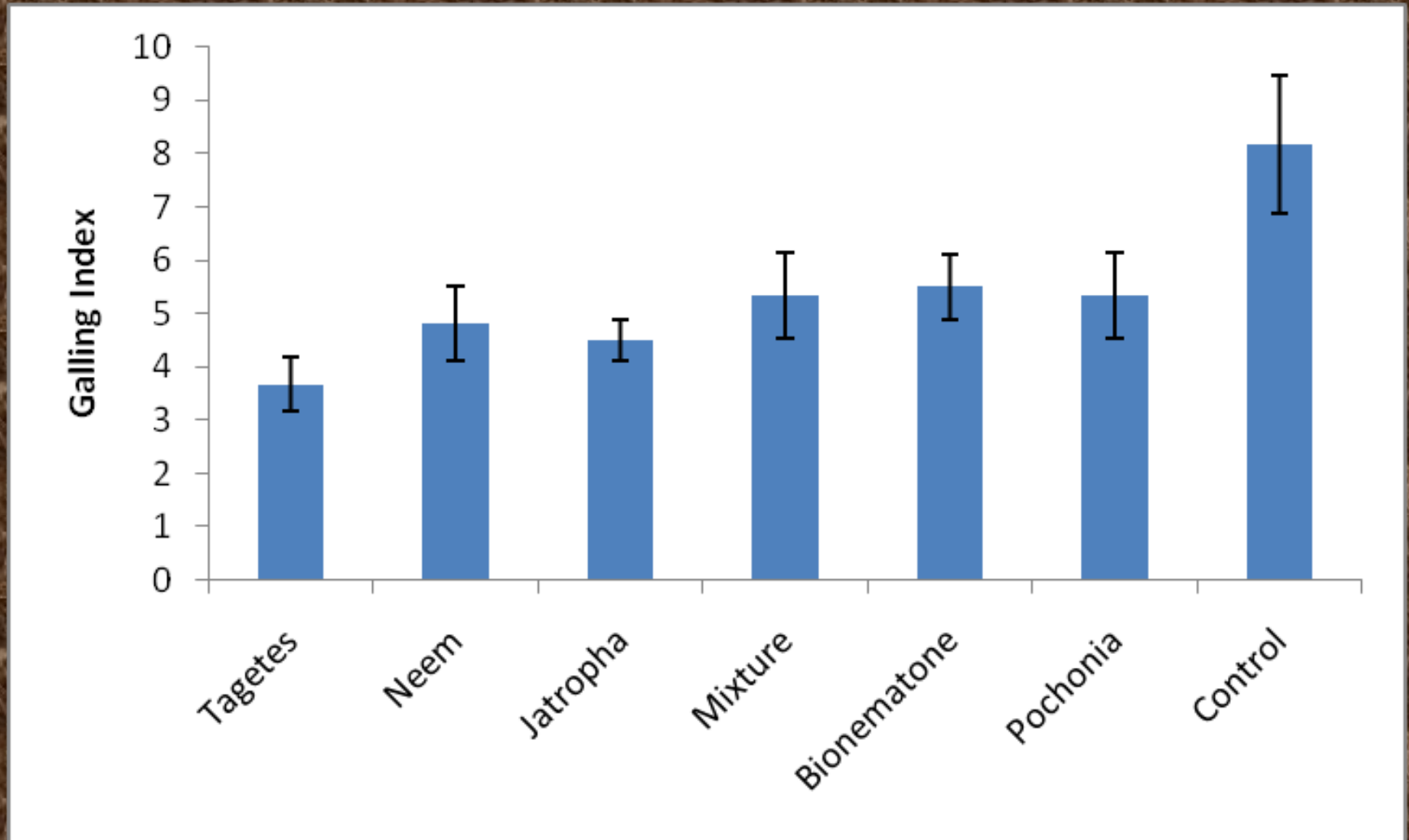
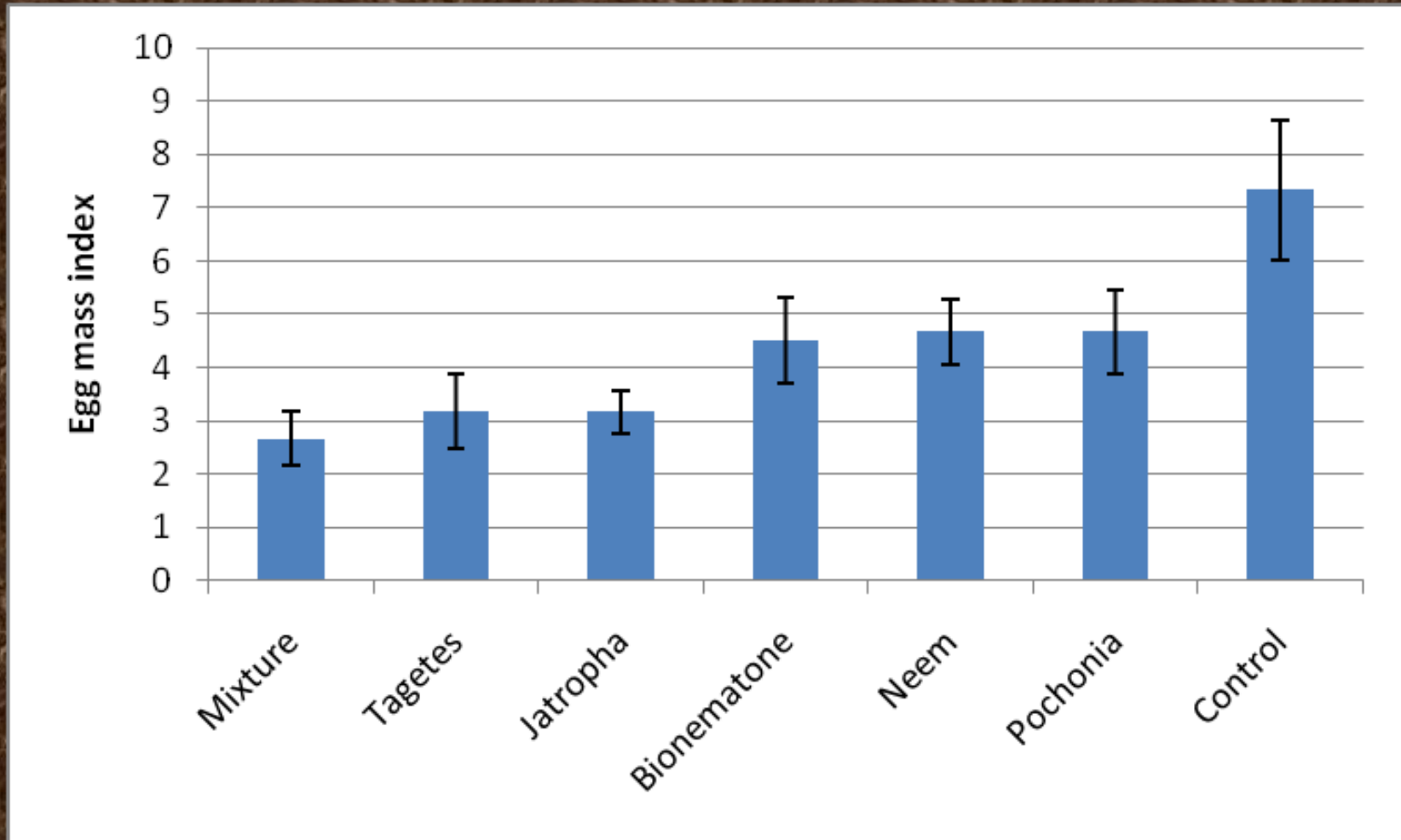


Fig. 3 Effect of organic amendments on EMI



DISCUSSION

- ❑ From the result, it is clear that, there was a significant difference ($p < 0.005$) in the effect of neem, jatropha and tagete applied singly or combination, bionematone and pochonia compared to untreated control in all the parameter examined.
- ❑ The no. of root gall incited peaked at 8.17 in the control but ranged from as low as 3.67 Tagetes treated plant.

- ❑ The highest pop. was recorded in the control(790.) while pop. Ditched to as low as 143 in Tagete treated plants
- ❑ Egg mass index was highest in(7.33) in the control and lowest(2.67) in the mixture
- ❑ Weight was highest(4.67g) Jatropha and as low as 1.8 in the treatment.
- ❑ Jatropha had the highest height reached(23.9cm) and low as 10.3cm in the control

CONCLUSION

□ It is evident that the effectiveness of all the amendment in suppressing nematodes is by blending organic substances of different origin