Field evaluation of 10 biofumigation crops for the control of *Pratylenchus penetrans* and *Verticillium dahliae*

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Introduction

- Biological control against soil pathogens is strongly needed
- This project concentrates on the effectivity of biofumigation crops as an alternative to chemical control

Research

- 3 years of field experiments on a sandy soil to investigate the effectivity of biofumigation on *Pratylenchus penetrans* (root lesion nematode), *Verticillium dahliae* (wilt disease) and the succeeding susceptible crop potato
- Reference treatments: fallow, Metam Sodium (300L/ha Monam) and *Tagetes patula* (Marigold)

Growing biofumigation crops (July – September) | Chopping and incorporating (September- April) | Growing test crop potato (April – September)

Results

- All biofumigation crops were host for *P. penetrans* (Fig. 1) and had hardly any effect on *V. dahliae*
- *Tagetes patula*, Metam Sodium and some other treatments increased potato yield (Fig. 2) compared to fallow

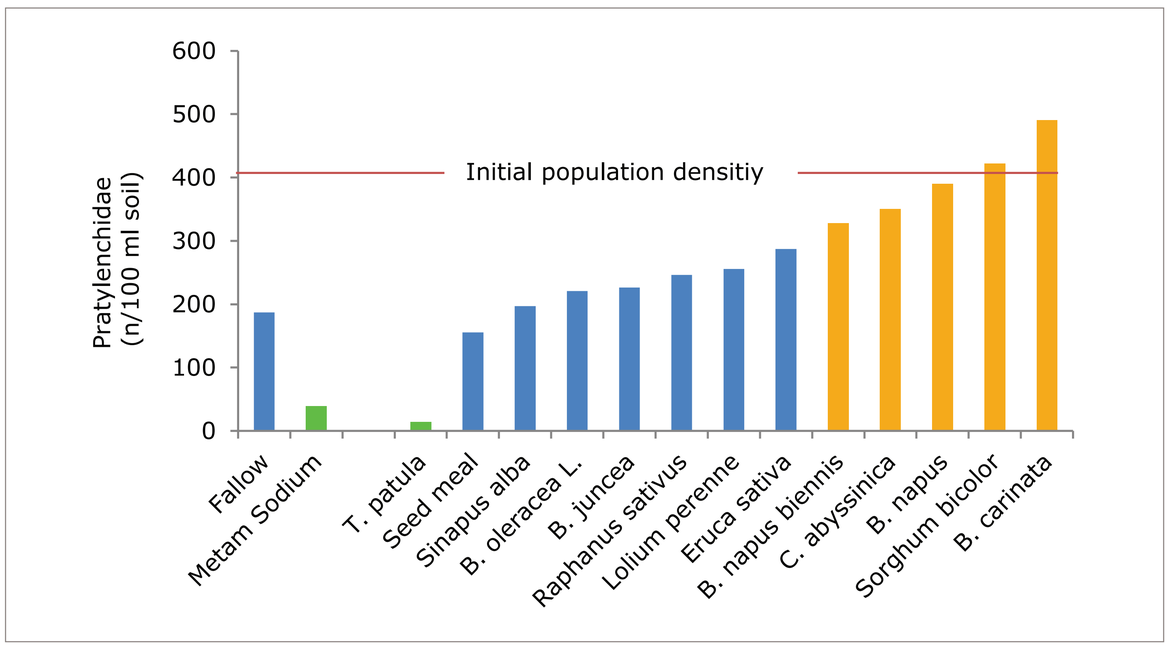

Figure 1. Effect of biofumigation crops on Pratylenchidae (April)

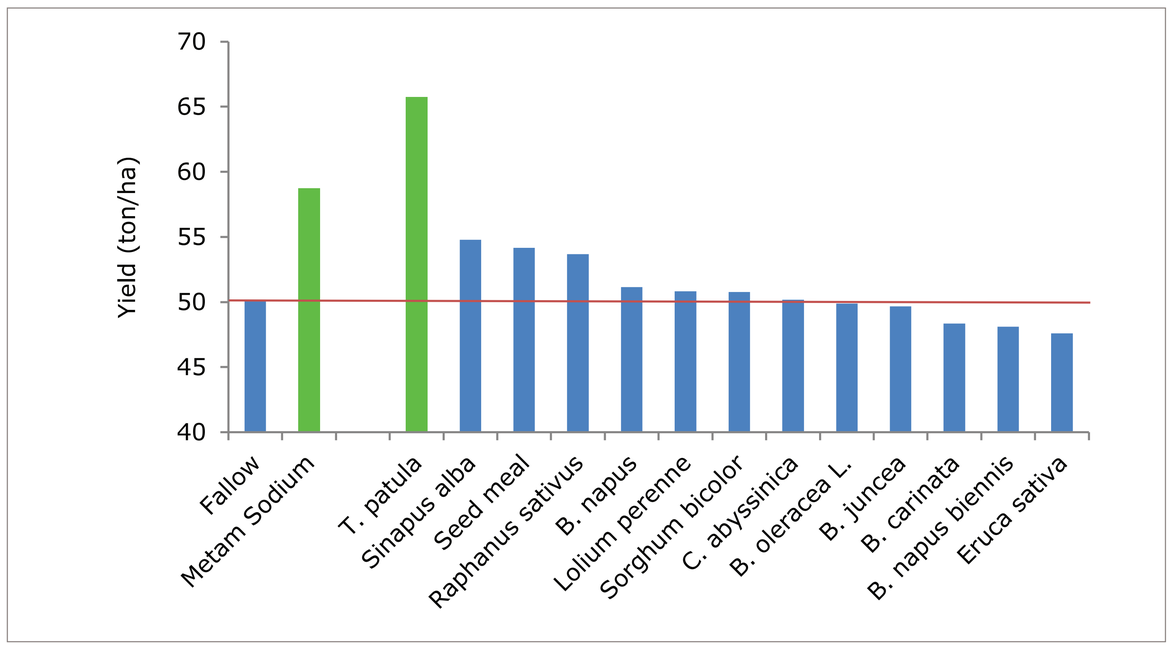

Figure 2. Effect of biofumigation crops on yield of a succeeding potato crop

Conclusion

- Selection on resistance against soil pathogens within biofumigation crops seems important
- Biofumigation and other green manure crops may improve soil texture, increase organic matter and nutrients level, change the microbial community and may have positive effects on yield and soil health
- Innovations in biofumigation crops (new cultivars, contents, resistance etc.) and techniques (incorporation, timing etc.), could develop biofumigation into an important tool for sustainable agriculture

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