

Cover Crops in Production Horticulture



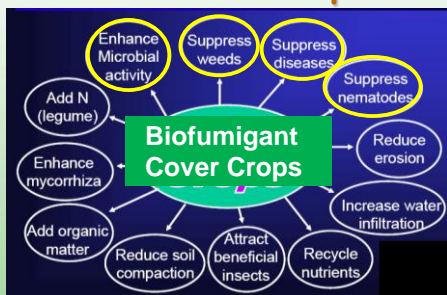
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Horticultural Crops

- Labor/input intensive
- Most relatively perishable
- Quality associated with value
- High dollar value per land area



Potential Benefits of Cover Crops

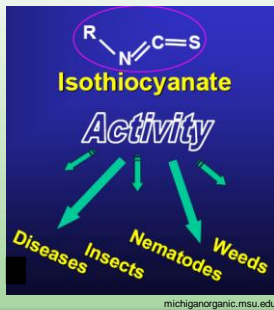


Biofumigants in Cover Crops

- Residue from plants that produce glucosinolates
 - Secondary plant metabolite
 - Produced by 15 plant families
 - Mainly in Brassicaceae (mustard) family
 - Glucosinolates not toxic but breakdown products are (isothiocyanate).

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Isothiocyanate Benefits



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Maximizing Biofumigation

- Species selection
 - Oilseed radish
 - Oriental mustard
 - Yellow mustard
 - Brown mustard
 - Arugula

Maximizing Biofumigation

- Species selection
- Seeding rate (lbs./acre)
 - Broadcast/incorporated or drilled

Cover Crop	Range	Rate Used
Oilseed radish	10 to 25	15
Oriental mustard	4 to 6	6
Yellow mustard	10 to 14	8
Brown mustard	10 to 14	8

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Maximizing Biofumigation

- Species selection
- Seeding rate
- Seeding time
 - Tolerates cool weather

Maximizing Biofumigation

- Species selection
- Seeding rate
- Seeding time
- Initial fertilizer if soil is poor

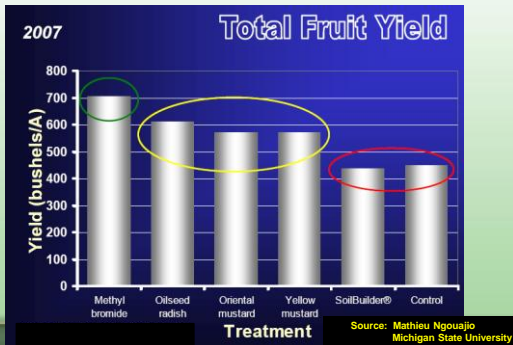
Maximizing

- Species selection
- Seeding rate
- Seeding time
- Initial soil fertility
- Cover crop maturity and incorporation
 - Grow to flowering stage
 - Crush when incorporating into soil



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Eggplant Example



Summary

- Biofumigant cover crops have demonstrated ability to improve vegetable production systems



Questions??