Anaerobic Soil Disinfestation (ASD)

- With ASD we consistently get an 80-100% reduction of *Verticillium dahliae* microsclerotia in soil using 9 ton/ac of rice bran as a carbon source.
- Yields under ASD generally equivalent or better than fumigant controls.
- Initial data suggest it is an economically viable option.
- Currently testing its effectiveness against other key pathogens.
- Also now testing at a larger field scale.

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**History of ASD**

- ASD was developed as an alternative to soil fumigation in the Netherlands and Japan, and is currently used extensively in greenhouse production in Japan.
- It has been found to be effective at suppressing many soil borne diseases, as well as nematodes for a range of crops.
- When combined with solarization, where temperatures are high enough, it may also control weeds.

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**How to do ASD**

1. Spread carbon source such as rice bran
2. Incorporate in soil
3. Form beds and lay drip tape
4. Cover with plastic tarp
5. Irrigate and keep at field capacity
6. Leave for 3 weeks
7. Punch holes in plastic
8. Transplant strawberries a few days later

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*Strawberry plants April 19, 2011 Ventura County*  
ASD 3 weeks/clear  
Untreated/clear

*9 ton/ac rice bran used in ASD*
Castroville 2010/11

- Verticillium dahliae Population in Soil (Post-Treatment)
  - Control, MSM, Steam, Steam+MSM, ASD, ASD+MSM, Pic-Clor 60
  - Comparison of Verticillium dahliae microsclerotia count before and after treatment.

Watsonville 2010/11

- Total Weed Density
  - Weed density #/10' bed top
  - Comparison of weed density across treatments.

- Marketable Fruit Yield
  - Marketable fruit yield lbs/acre
  - Comparison of marketable fruit yield across treatments.

Watsonville 2011/12

- Verticillium dahliae Population in Soil (Post-Treatment)
  - Control, Fish Emulsion, ASD, ASD + Fish Emulsion, ASD + MSM, Pic-Clor 60
  - Comparison of Verticillium dahliae microsclerotia count before and after treatment.

Santa Maria 2011/12

- Costs and Net Return
  - Net return above harvest cost
  - Treatment cost
  - Net return above harvest and treatment costs

MSM: Mustard seed meal.