

InocuPro



Root Fertilizer Production

2.009 Blue B

Woodie Flowers Steve Haberek

Daniel Guarda Phil Hum

Levi Lalla

Wey-Jiun Lin

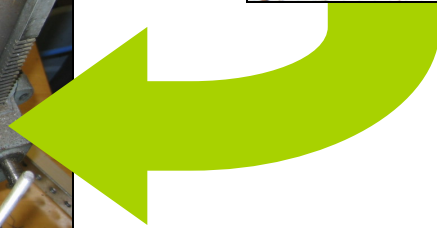
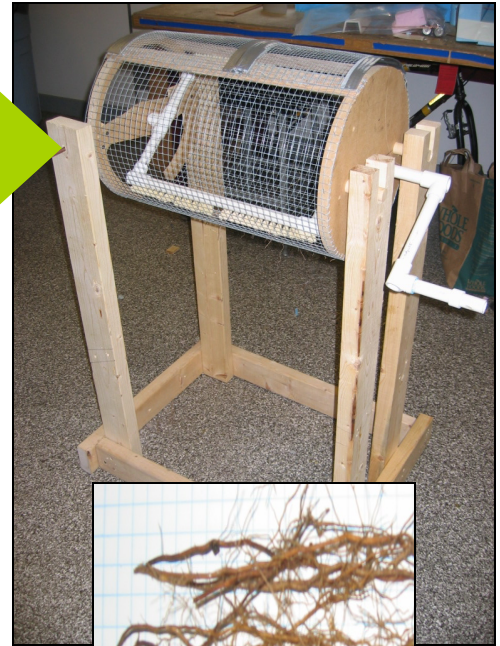
Zach Eisenstat

Justin Holland

Tiffany Yang

10/20/05

Background



Mycorrhizal Fungi
5 grow bags/hour

Market

Small Farms

- Vegetable farmers, transplanted plants
- 84,000 farms 1-49 acres in US

Developing Countries:

- Consume over 63% of world's fertilizer
- Manual labor

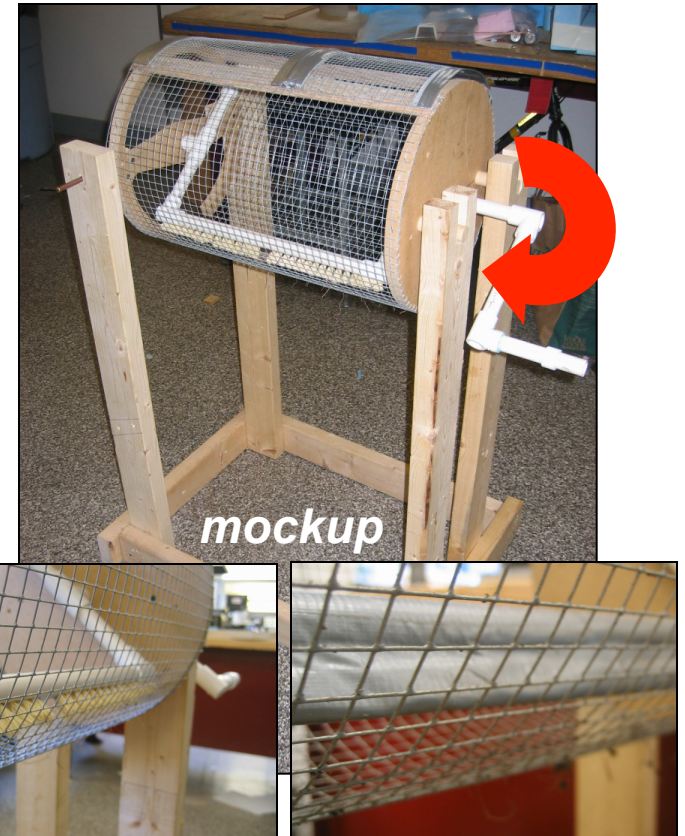
Competition:

- Phosphate fertilizers
- \$1,500 on 9 acres
- Variable vs. Fixed

Design Challenges

Tumbler:

- Occasionally Jammed
- Excess Particles

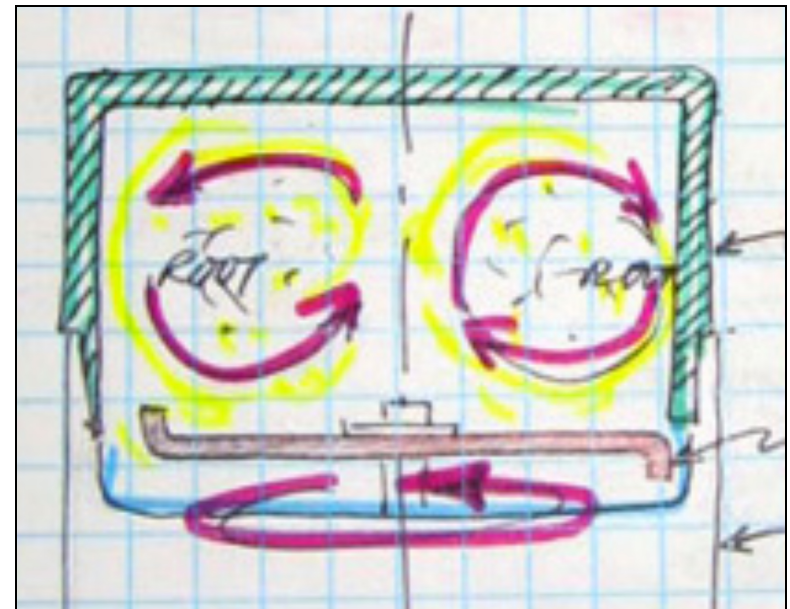
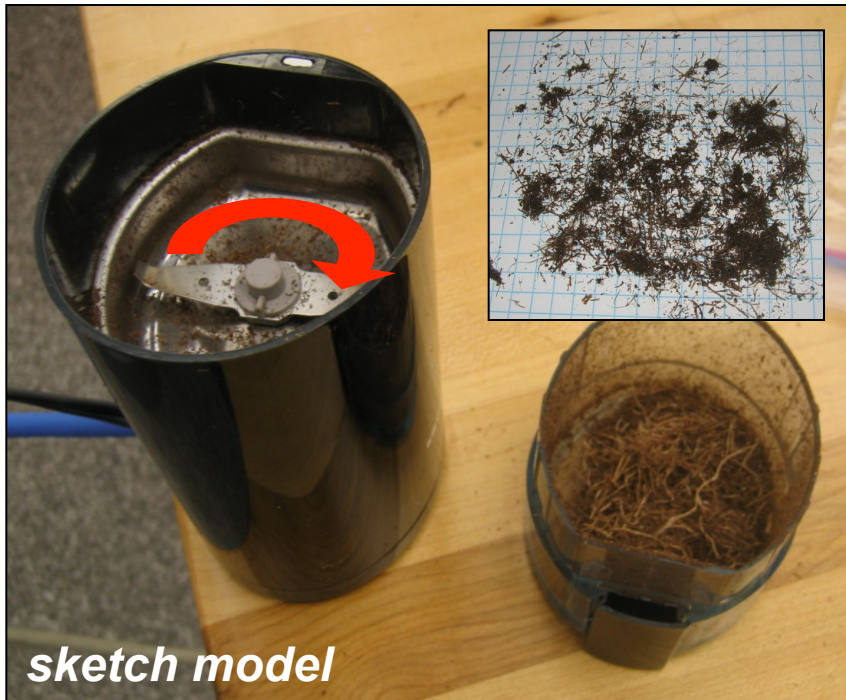


Grinder/Cutter:

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- Power/Speed

Grass? Seeds? Rocks?

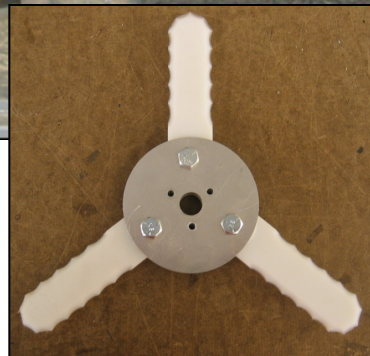


Circulation of root:

$V_{blade} \gg V_{root}$

Design Challenges

Grinder/Cutter: (cont.)



- Circulation of root:
 $V_{blade} \gg V_{root}$
- Blade spin from bottom
- No spinning axle revealed
- Speed $\approx 3000\text{rpm}$
- Flail blade

Design Challenges

Integration:

