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MECHANICAL HARVESTING OF GRAPE TOMATOES

WHY MY INTEREST IN MECHANICAL HARVESTING?

- ✘ Picking grape and cherry tomatoes is very labor intensive
- ✘ Grape and cherry tomatoes have high profit potential
- ✘ Grape tomatoes have relatively thick skin / flesh, so can take the punishment of a little bouncing.



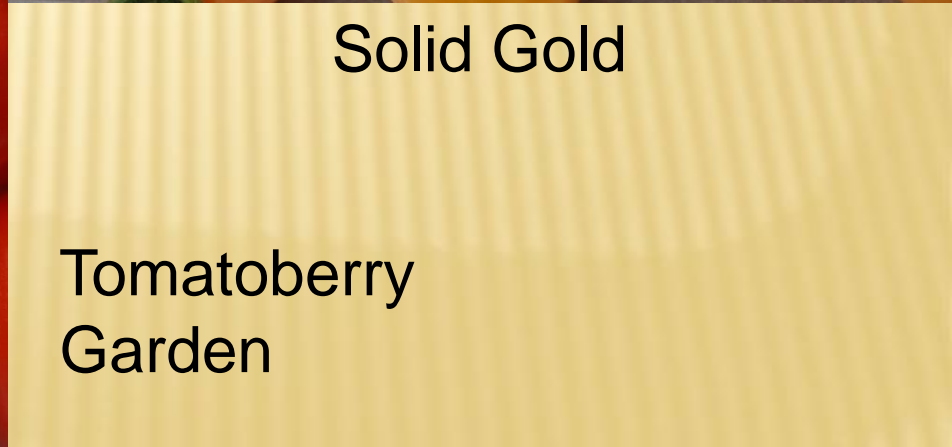
Smarty



Solid Gold



Tomatoberry
Garden





Favorita

V
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Smarty



OUR CHALLENGE(S):

- ✘ Develop a harvest mechanism that is very portable and easy to operate.
- ✘ Keep the cost low, so it is accessible to every grower.
- ✘ Modify trellis's for use by the harvesting mechanism.
- ✘ Harvest usable / marketable fruit.

WHERE WE STARTED

This was our 2008 proof of concept

Due to high winds all of the vines tended to grow on the East side

Made hand harvesting easy, but was little help in mechanical harvesting

Required varieties that were very indeterminate



2009 VERSIONS



Standard "I"
Florida weave



45 degree Incline
with Tenax
HortoNova Fabric



"V" trellis with
Tenax HortoNova
fabric



45 degree incline base detail

“V” trellis base detail



GRAPE TOMATOES IN THE TRIAL

✘ Tami G



✘ Sweet Hearts



TRIAL REPLICATION AT DICKINSON FARM



MODIFIED RECIPROCATING SAW



Thanks to Matt Stieman, Dickinson Farm, for the idea!

SHAKING THE VINES



POST HARVEST



SLANT TABLE FOR SORTING



OUR GOALS

- ✘ Labor reduction
- ✘ Increased profits
- ✘ Move fruit selection from field to packing house
 - + Sort on a slant table in the shade.
 - + Reduction in field heat = greater shelf life

SPECIAL THANKS TO:

- ✘ Hillary Swank, Research Intern 2009
- ✘ Alex Surcica, Research Assistant
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**THANK YOU, YOUR COMMENTS, QUESTIONS
AND ENGINEERING SOLUTIONS ARE WELCOME**