PROTOTYPE GARLIC PLANTER PROGRESS REPORT

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Problem Statement
The major obstacles In planting hardneck garlic are the cost of labor and the methods are unpleasant, painful and frequently unhealthy.

Solution
I designed and built a prototype Garlic Planter in 2010 and utilized it to plant hardneck garlic with very positive results. This improved our planting speed by a minimum of 6 times with a corresponding reduction in labor while eliminating the negative realities of the manual planting methods. Labor savings in the first year paid for the prototype.

Description
The Platform is comprised of two parts:
1.Base-Unit - Common to all platforms
2.Functional-Unit - Interchangeable & task specific. Functional-units may contain adaptive hardware (components, etc.) to configure the base-unit for the task for which they are designed. Thus a Garlic Platform is a Base-Unit and a Garlic Functional-Unit

Current State
With the support of SARE and in collaboration with Alfred State College (ASC) of Technology in Alfred, NY we designed and built Version 1.0 incorporating the features of the prototype plus key improvements establishing the foundation for subsequent upgrades over the next two years. These improvements allowed us to plant garlic in a single pass with adjustable height and wheel spacing while offering a safer and more comfortable experience for the operators. A NOFA Field Day was held on farm 9/28/11 with a large audience and was documented in Country Folks Grower December 2011.

Desired State and Future Goals
Phase 2 (through 2013) Incorporate additional flexibility into the base-unit that will support more functional activities. The design will facilitate inexpensive and easy configuration of the platform for widely varying tasks specifically designed for differing crops in either rows or beds.

The functional units are designed to be installed onto the base unit using minimal or no tools. The platform will be adjustable for various row-spacings, differing crops, dissimilar functions and operation at speeds appropriate to the specific function. A number of additional functional units have been identified: **flame weeding & spray platforms, potato planting & harvesting**, transplanter, drip tape and row cover dispensing and retrieval, **side dresser**, drop spreader, and **harvest & pre-wash** functions. Functions in bold have been demonstrated.