

# Program in the Post Harvest Quality of Fruits and Vegetables

Program in the Post Harvest Quality of Fruits and Vegetables

## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Program in the Post Harvest Quality of Fruits and Vegetables

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms			10%	
202	Plant Genetic Resources			10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants			10%	
204	Plant Product Quality and Utility (Preharvest)			15%	
205	Plant Management Systems			10%	
206	Basic Plant Biology			10%	
501	New and Improved Food Processing Technologies			15%	
502	New and Improved Food Products			10%	
503	Quality Maintenance in Storing and Marketing Food Products			5%	
701	Nutrient Composition of Food			5%	
	<b>Total</b>			100%	

## V(C). Planned Program (Inputs)

### 1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	0.0	0.0	15.0	0.0
<b>Actual</b>	0.0	0.0	15.0	0.0

### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
	0	171768	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	666673	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	522241	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Specific activities and outputs vary across a wide range from molecular level inquiry to field and lab based studies related to postharvest handling, storage, and processing of horticultural crops. These activities will include: basic research which focuses on the application of molecular biology, genetics and biochemistry, related to the biological, chemical, and physiological mechanisms that explain postharvest phenomenon in horticultural crops, studies directed at the identification of CA storage regimes for apples and other fruits, investigation of flavor chemistry in apples, studies of the post-harvest/processing quality component of Tri-State Variety trials in potatoes, research aimed at the identification of evaluation factors for potato processing quality, research directed toward the identification of strategies for storage of seed potatoes, research focused on the mechanical harvest and subsequent handling and storage requirements in asparagus, studies which address the use of microwave-vacuum drying technology for fruits and vegetables, studies which focus on lenticel breakdown and fruit finish in apples, and research which focuses on crop management factors that affect postharvest fruit and vegetable quality.

**2. Brief description of the target audience**

The target audience will be scientists in the area of postharvest quality of fruits and vegetables, agribusiness, economists, and the participating vegetable and fruit industries (in particular the stone and pome fruit industries, and the potato industry).

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	500	300	0	0
2008	500	300	0	0

**2. Number of Patent Applications Submitted (Standard Research Output)**

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	1
2008:	1

**Patents listed**

Knowles N., L. Knowles. Use of C3 to C14 aliphatic aldehydes, ketones, and primary and secondary C3 to C7 alcohols to inhibit sprouting of potato tubers. Full patent application filed in USPTO Aug. 6, 2008, serial no. 12/186,861. 2008. Patent 60/955,156

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	0	12	
2008	0	17	18

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

Peer reviewed journal articles

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	12	15

**Output #2**

**Output Measure**

Graduate students supported on Agricultural Research Center and external funding

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	4	9

**V(G). State Defined Outcomes**

<b>O No.</b>	<b>Outcome Name</b>
1	Please see written paragraph under evaluation.

**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
-------------	----------------------------	---------------

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
----------------	-----------------------

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

Economy

Appropriations changes

Public Policy changes

Government Regulations

Competing Public priorities

Competing Programmatic Challenges

### **Brief Explanation**

A number of different measures will be used to evaluate the success of research projects described in this program at multiple points throughout the duration of the program. The short-term goal of creating new knowledge is evaluated by the extent to which this new knowledge is communicated throughout the scientific literature. The mid-term goal of communicating that knowledge to stakeholders will be evaluated based upon the success with which the information is disseminated through the use of presentations and posters given at grower sponsored conferences, workshops, and research reviews, and at university sponsored field days. The long-term goal to enhance quality of postharvest products in fruit and vegetable crops, and to identify new technologies that can be used in food storage and processing will be evaluated by the extent to which research findings are adopted throughout the industry. For those projects focusing on the investigation of improved storage practices, the extent to which recommended practices have been adopted by the food storage and processing industries will be used as the measure of success. In the case of research that focuses on the development of new products, such as material that is applied to potato tubers to suppress sprouting during storage, the extent to which the new products are adopted for use throughout the industry will be used as a measure of success. For those projects which focus on the selection of fruit and vegetable cultivars that have good potential for value added contributions, the measure of success will be the extent to which newly released cultivars gain acceptance by growers, and begin to contribute to the agricultural economy. Most of the research projects in this program are also funded by commodity commissions and other agricultural stakeholder organizations. Scientists make progress reports on an annual basis to these organizations as a part of the process of applying for continuation of funding. The extent to which these projects receive continued financial support is another measure of their success.

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

Before-After (before and after program)

During (during program)

#### **Evaluation Results**

#### **Key Items of Evaluation**