

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Food Safety

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|--------------|---|-----------------|-----------------|----------------|----------------|
| 501 | New and Improved Food Processing Technologies | 0% | | 25% | |
| 502 | New and Improved Food Products | 50% | | 25% | |
| 503 | Quality Maintenance in Storing and Marketing Food Products | 0% | | 25% | |
| 504 | Home and Commercial Food Service | 0% | | 15% | |
| 711 | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources | 50% | | 0% | |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins | 0% | | 10% | |
| Total | | 100% | | 100% | |

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

| Year: 2013 | Extension | | Research | |
|--------------------------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| Plan | 2.0 | 0.0 | 2.0 | 0.0 |
| Actual Paid Professional | 0.5 | 0.0 | 0.2 | 0.0 |
| Actual Volunteer | 0.0 | 0.0 | 0.0 | 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 |
| 48393 | 0 | 37889 | 0 |
| 1862 Matching | 1890 Matching | 1862 Matching | 1890 Matching |
| 0 | 0 | 0 | 0 |
| 1862 All Other | 1890 All Other | 1862 All Other | 1890 All Other |
| 0 | 0 | 0 | 0 |

V(D). Planned Program (Activity)

1. Brief description of the Activity

In the CNMI, after produce is harvested, the quality is deteriorated significantly because there is a lack of awareness of the significant break troughs' in science and such can be credited to our somewhat new presence as a program under NMC-CREES. In order to develop unique value-added product using local produce, the demands and needs of local farmers should be understood and also the most interested produce and value-added products should be identified prior to developing value-added processing. The program helps farmers and producers to select the most characteristic tropical produce in the CNMI in order to develop desirable value-added products.

The following are the specific activities performed:

- Provided workshops on topics related to value adding ice cream making and calamansi lemon processing and HACCP on meat processing and slaughtering house
- Participated at various community events (Rota Ag. Fair, Saipan Ag. Fair, Tinian Pepper Festival, etc.)
- Provided on-site consultation at various food processing centers (Marianas Meat Harvest, Shinho Development for jam and ice cream making)
- Created various outreach publications (Handling Food Safely brochure)

2. Brief description of the target audience

- * Farmers, other crop producers, and farm helpers
- * Individuals involved in food industry such as processors, managers, food handlers, vendors
- * Grade schools, high schools and college students interested in food safety and quality
- * Government agencies/collaborators

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

| 2013 | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|--------|------------------------|--------------------------|-----------------------|-------------------------|
| Actual | 120 | 750 | 900 | 1800 |

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

| 2013 | Extension | Research | Total |
|--------|-----------|----------|-------|
| Actual | 0 | 0 | 0 |

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of research on food quality improvements
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of novel food processing technology workshops

| Year | Actual |
|------|--------|
| 2013 | 2 |

Output #3

Output Measure

- Number of workshops related with food safety and quality

| Year | Actual |
|------|--------|
| 2013 | 3 |

Output #4

Output Measure

- Numbers of newly developed value-added products

| Year | Actual |
|-------------|---------------|
| 2013 | 2 |

Output #5

Output Measure

- Numbers of technical information provided to the public

| Year | Actual |
|-------------|---------------|
| 2013 | 1 |

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

| O. No. | OUTCOME NAME |
|--------|--|
| 1 | Numbers of farmers/producers that develop value added products |
| 2 | Number of farmers/producers implementing good post-harvest practices |

Outcome #1

1. Outcome Measures

Numbers of farmers/producers that develop value added products

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

| Year | Actual |
|-------------|---------------|
| 2013 | 3 |

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

It is difficult to ship any agricultural product off-island as a potential export due to lack of fumigation and food irradiation facilities. Additionally, the high price of electricity makes it very difficult for farmers/producers to use cold storage facilities. Consequently a large portion of these produce is either fed to livestock or given away. Thus there is need to for local farmers and producers to utilize fresh produce in order to create additional profits for small and mid-sized farms in the NMI.

What has been done

Extensive outreach efforts have been made to help local farmers and producers to develop value-added products. 2 value-added process works shops were held to teach how to make fruits jams and how to preserve these agricultural products. In addition, HACCP and safe food handling workshops were also provided to the public. The Food Safety Program Leader also visited producers to give them pertinent consultation on site.

Results

We have three new individuals processing locally grown and butchered meat, calamansi lemon, and extending the shelf-life of coconut sap beyond current standards. The program provided these producers technical advices to obtain suitable containers, equipment, and ingredients as well.

4. Associated Knowledge Areas

| KA Code | Knowledge Area |
|----------------|---|
| 501 | New and Improved Food Processing Technologies |

502 New and Improved Food Products

Outcome #2

1. Outcome Measures

Number of farmers/producers implementing good post-harvest practices

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

- 1 research was conducted to improve food quality and shelf-life tests for 5 commercial products: 3 cookies made from local produce, 1 locally made wine, hot pepper pastes,
- 2 value-added processing workshops, on jam making and canning processes were provided to local farmers and producers, and 5 food manufacturers are applying the knowledge gained from these workshops to improve their products (jams, hot pepper sauce, and pickles).
- 2 intensive HACCP workshops for meat processing and slaughtering house and 1 safe food handling workshop were provided. As a result, one commercial slaughtering house, Marianas Meat Harvesting Company, updated its HACCP system and is now in compliance with local food safety regulations.
- Information for ethylene gas removal sachet was disseminated to improve post-harvest quality of fresh produce. 3 farmers are using these ethylene gas removing sachets to maintain the freshness of their fruits (banana, sour sop, and calamansi lemon).

Key Items of Evaluation