

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger

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
102	Soil, Plant, Water, Nutrient Relationships	15%			
205	Plant Management Systems	10%			
213	Weeds Affecting Plants	5%			
216	Integrated Pest Management Systems	10%			
307	Animal Management Systems	15%			
308	Improved Animal Products (Before Harvest)	15%			
503	Quality Maintenance in Storing and Marketing Food Products	10%			
604	Marketing and Distribution Practices	10%			
607	Consumer Economics	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	28.0	0.0	0.0	0.0
Actual Paid	17.0	0.0	0.0	0.0
Actual Volunteer	2500.0	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
740000	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
595038	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

The Global Food Security and Hunger planned program has the following goals: 1) increase food supply and quality by improving and promoting animal health, marketing, use of pesticides, use of risk mitigation, and control of predation; 2) engage individuals in the promotion, support, and sustainability of horticulture, 3) expand marketing opportunities for value-added products and develop food systems that support local consumers and local business creation and expansion; 4) enhance the agricultural knowledge so that citizens make informed decisions related to the production of food, fiber and wildlife ecology; and 5) build volunteer capacity related to agriculture within communities.

In 2014 there were 983 educational activities reported and 136,210 direct contacts in this program area. Of those direct contacts, 56,715 were with youth.

Animal Production and Management - Activities in this area include those that address animal health, livestock production, animal product marketing, grassland management, and aquaculture. The major initiatives included: feeder cattle marketing program, livestock improvement, grassland management, and aquaculture.

Horticulture - The major initiatives included: homeowner and commercial horticulture, the Master Gardener Program and International Conference. For the period 2011-2013/14, master gardeners across the state volunteered more than 81,000 hours in 718 projects contributing \$1,788,151 (at the national value of volunteer time) to their local communities and to WVU Extension Service, contacting 22,000 adults and 2,500 youth annually.

Pest Management - The major initiatives included: Integrated Pest Management, the White Tailed Deer Damage Program, and Weed Control Management and Master Gardener.

Sustainable Agriculture: Agriculture Business/Small Farm Management - The major initiatives included: West Virginia Small Farms Conference and Small Farms Website.

Nutrient Management - The major initiatives included fertilizer use and selection, soil sampling, and composting. The major initiatives included fertilizer use and selection, soil sampling, and composting.

Agriculture Literacy - The major initiatives included in this area are Agriculture in the Classroom, 4-H youth agriculture activities including judging, skillathons, and fairs and festivals.

2. Brief description of the target audience

The target audience is beef and dairy producers, large and small growers of horticultural products, regional livestock producers, market managers, homeowners, shepherds, pesticide applicators, certified nutrient managers, youth livestock exhibitors, volunteers, Extension agents, and Extension specialists.

3. How was eXtension used?

One faculty member was a member of the national Extension Master Gardener social media team through eXtension that is responsible for the EMG blog, Facebook and Twitter.

One faculty member was a member of the leadership team for The Garden Professors, an eXtension COP that writes and shares science based information to the public through a blog and social media.

One faculty member answered questions through the eXtension ask an expert program.

Last year I attended and presented two presentations at the National eXtension Conference.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	79495	833942	56715	263132

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	26	13	39

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational activities

Year	Actual
2014	983

Output #2

Output Measure

- Number of educational materials created or updated

Year	Actual
2014	24

Output #3

Output Measure

- Number of educational materials distributed

Year	Actual
2014	1094774

Output #4

Output Measure

- Number of professional presentations

Year	Actual
2014	43

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of participants who improve or increase skills in farm management.
2	Number of producers indicating adoption of recommended practices.
3	Number of people certified or licensed to practice in the field
4	Number of new groups or organizations that are established or enhanced
5	Number of producers (and other members of the food supply chain) that have increased revenue.
6	Dollar amounts generated as a result of implementing new techniques or procedures
7	Number of participants who increase or improve skills in animal production and health.
8	Number of participants who increase or improve skills in weed or pest management.
9	Number of participants who increase or improve skills in aquaculture.
10	Number of participants who increase or improve a skill in nutrient management.
11	Number of farmers who produce ethnic specialty crops.

Outcome #1

1. Outcome Measures

Number of participants who improve or increase skills in farm management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	115940

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Kanawha County is the state's largest county in terms of population size and fourth largest in terms of land area. This makes it difficult for Extension to reach a majority of the large and diverse population in the county. In order to reach a larger population, mass media such as newspaper and television can be effective tools.

What has been done

The WVUES agriculture Extension agent in Kanawha County is the weekly garden columnist for the Charleston Gazette-Mail, which has a statewide distribution. The column is titled "Garden Guru," and focuses on seasonally appropriate garden and horticulture topics. Articles are often shared online by other groups such as the National Extension Master Gardener Facebook page. The agent also serves as a guest, one week each month, on the "Saturday Report with John Marra", a television show featuring agricultural experts. This station serves southern and central West Virginia, eastern Kentucky, and southeastern Ohio.

Results

115,940 (the readership and viewership) have gained knowledge of appropriate garden and horticulture topics. The editor of the column has indicated that the Kanawha County agent's column receives the most comments and has the highest estimated readership of any in the paper.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships

205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices
607	Consumer Economics

Outcome #2

1. Outcome Measures

Number of producers indicating adoption of recommended practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

If producers follow through with these practices that utilize grazing lands while protecting the environment, they will increase profitability and will decrease the impact their livestock have on the environment.

What has been done

The Livestock Grazing School is a designed to educate livestock producers on economical and efficient ways of utilizing their grazing lands while protecting the environmental resources they are utilizing. This program is based on various methods of improved grazing strategies such as management intensive grazing, mob grazing, rotational grazing etc. It introduces producers, as well as those individual who may become producers, to these concepts and encourages them to incorporate these strategies into their operations. There were 15 participants this year.

Results

As a direct result of the grazing school eight of the fifteen participants have indicated that they have incorporated at least one of the practices they learned about. The remaining seven have indicated that they plan to do so in the next year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #3

1. Outcome Measures

Number of people certified or licensed to practice in the field

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of new groups or organizations that are established or enhanced

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The 2012 Census of Agriculture lists 210 farms in Kanawha County, a drop of 18 percent from the 256 farms in the 2007 census. Despite this drop in "traditional farms," interest in locally farmed products and small scale farming is at an all-time high. This interest comes from individuals living within city limits, rather than those who have traditional rural farmlands. The metropolitan area of Charleston is large market that, more and more, demands availability of local produce and agricultural products.

What has been done

WVUES organized the WV Urban Agriculture Conference. Other agencies worked with WVUES including WVSU Extension Service, the Capitol Conservation District, the WV Farmers Market Association, the Natural Resources Conservation Service, the WV Food and Farm Coalition, the Charleston Area Alliance, and SARE. Other urban agriculture efforts include: developing the Kanawha Community Garden Association, organizing the Kanawha Urban Ag Alliance, seeking resources and partnerships for developing urban farming space on the West Side of Charleston, coordinating workshops for urban agriculture producers, and consulting on urban agriculture governmental ordinances.

Results

Fifteen partners from 12 agencies worked collaboratively to plan and implement the WV Urban Agriculture Conference. They raised \$12,000 in support funds. Two hundred and thirty-two individuals attended, and 100% of those indicated that they gained knowledge and skill because they attended the two-day conference.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
607	Consumer Economics

Outcome #5

1. Outcome Measures

Number of producers (and other members of the food supply chain) that have increased revenue.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	512

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Specialty crop producers in West Virginia are producing over 60 types of fruits, vegetables and herbs in 2014 primarily for direct markets. The commercial horticulture program has a long term

goal of increasing supply, diversity and profitability of specialty crops by increasing knowledge and skills of new and established producers. There are approximately 550 high tunnels in operation or currently being constructed across West Virginia

What has been done

In 2014, 15 training sessions for 512 growers were conducted related to specialty crop selection, season extension, scheduling, harvest, post-harvest handling and economics with growers across the state. Over 1200 stakeholders were contacted through on-farm visits, workshops and production meetings. Over 90,000 clients in West Virginia received information related to specialty crop production.

Results

Grower surveys reveal gross revenue of approximately \$3.00/ft². Thus, given an average size high tunnel of 2100 ft², growers are generating as much as \$3,500,000 in gross farm income per year with high tunnel production in West Virginia.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
604	Marketing and Distribution Practices
607	Consumer Economics

Outcome #6

1. Outcome Measures

Dollar amounts generated as a result of implementing new techniques or procedures

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4039

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need in West Virginia to build, support and strengthen a statewide network of those involved in local food economies, improve access for West Virginians to healthy, locally-produced food, and help food and farm businesses to grow.

What has been done

WVUES faculty work with the WV Food and Farm Coalition which builds linkages among farmers, processors, distributors and others interested in making the food economy stronger.

In 2014, the Food Access work group selected mobile markets as a project that had the most potential to benefit communities. A plan was made to develop an Request For Application that would be released at the upcoming Roadmap to the Food Economy Conference. Two applications were selected to be awarded funding and establish mobile markets.

Results

MyMobileMarket, was established in Mingo County, WV using mobile market funds. MyMobileMarket visited five limited access communities over the market season. Those five additional markets generated \$4,039 in total revenue with \$1,952 (48%) coming from CSX vouchers. The MyMobileMarket project has used the initial grant from the food access group to garner additional funds for expansion and sustainability including \$7,000 from an Entrepreneur competition. A separate \$12,000 funding opportunity coincided with the mobile market award, offering a source of revenue through farmers market vouchers. The vouchers provided a supplemental source of revenue to allow the mobile market to build community recognition and a strong customer base in its first year of operation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
607	Consumer Economics

Outcome #7

1. Outcome Measures

Number of participants who increase or improve skills in animal production and health.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	256

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many small producers in WV are interested in small-scale pastured poultry as a new enterprise or for income diversification. However, WV poultry producers are constrained by very limited access to small-scale, custom poultry processing facilities. This idea is very popular among young, beginning farmers and women farmers, due to the quick turn-around, low physical requirements and environmental "friendliness". They are interested in raising poultry on pasture, processing on-farm, and selling directly to local markets/individual customers. They would like to profit from federal exemptions permitting WV farmers to sell 3,000 broilers/year directly to consumers without inspection.

What has been done

"Small-Scale, Backyard or Pastured Poultry Production for WV Livestock Producers" is a short, hands-on agent to farmer training program that introduces an alternative enterprise opportunity for small producers to operate under the 1,000 bird exemption. Each workshop was a 3-hour workshop, consisting of a 1.5 hours of presentation session, followed by a 1.5 hour processing demonstration. The training workshops covered topics for aspiring, beginning and mid-level small-scale poultry producers. During 2013-2014, the project has trained more than 256 producers and agricultural service providers in 12 counties. Educators and producers have also received follow-up support from the program to enhance their efforts through our interactive on-line curriculum.

Results

256 producers gained knowledge and skills in the following areas: production, nutrition and management basics; the business-side of pastured-poultry; farm/food safety and labelling issues, and rules/regulations for direct marketing; and scale-appropriate processing equipment and processes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
604	Marketing and Distribution Practices

Outcome #8

1. Outcome Measures

Number of participants who increase or improve skills in weed or pest management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to high humidity and optimum temperatures during the growing season, commodity growers, homeowners, and nursery and lawn care professionals experience very high insect and disease pressure on plants they grow. Many plant problems are environmental and/or related to imbalance in nutrition. Most small growers and home owners apply pesticides without precisely knowing the problem. Management initiatives of plant problems should be taken only after confirming the actual cause by collecting the right sample and sending it through county offices to the reputable diagnostic clinic.

What has been done

WVU plant and pest diagnostic clinic obtained funding from National Plant Diagnostic Network and the North East IPM center to conduct educational programs on the importance of diagnostics and using appropriate products on a need basis only. The WVU Extension integrated pest management team organized a mobile pest ID clinic in Kanawha, Braxton, Jefferson, Marshall, Clay, and Mineral counties. Small growers and master gardeners learned about the diagnostic facilities in Morgantown. In addition, a quarterly newsletter, "IPM Chronicle" highlights the usefulness of monitoring and diagnostics.

Results

The WVU Plant and Pest Diagnostic Clinic obtained over 400 samples which is double the number collected in 2013. This increase was attributed to behavioral changes of clientele who, because of their attendance at clinics, had decided to make pest management decisions based on diagnostic data. Recommendations and follow up conversation with those clientele revealed that they improved their knowledge on the importance of diagnostics and made decisions to collect samples and mail them to Morgantown. Out of those 400 clients, 50% indicated that they did it because of their improved awareness of the need to use data to make decisions, and would

do the same if they encounter pest problems in the future.

4. Associated Knowledge Areas

KA Code	Knowledge Area
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #9

1. Outcome Measures

Number of participants who increase or improve skills in aquaculture.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of participants who increase or improve a skill in nutrient management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many plant problems are environmental and/or related to imbalance in nutrition. Surveys showed that most small growers and home owners buy pesticide products from local stores and apply it without knowing the problem. It is critical that management initiatives of plant problems are taken only after confirming the cause by collecting the right sample and sending it through county office to the reputable diagnostic clinic. This has the potential to minimize pesticide use.

What has been done

WVU plant and pest diagnostic clinic obtained funding from National Plant Diagnostic Network and NE-IPM center to conduct educational programs to raise awareness about the importance of diagnostics and use of only appropriate products on a need basis. Educational programs offered by WVU Extension ANR unit integrated pest management team by organizing mobile pest ID clinic in Kanawha County, Braxton County, Jefferson County (2013); Marshall county, Clay County and Mineral County (2014). Small growers and master gardeners learned about the importance of diagnostics and facilities in Morgantown. In addition, quarterly newsletter IPM chronicle also highlighted the usefulness of monitoring and diagnostics.

Results

WVU Plant and Pest Diagnostic Clinic obtained over 400 samples which is double compared with 2013. This increase in sample was attributed to behavioral changes of clientele on making pest management decisions based on diagnostic data. Recommendations and follow up conversation with those clientele revealed that they improved their knowledge on the importance of diagnostics and made decisions to collect samples, fill out Clinic form and mail those to Morgantown. Out of those 400 clients, 50% indicated that they did it because of the improved awareness and would like to do the same if they encounter pest problems in the future.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

Outcome #11

1. Outcome Measures

Number of farmers who produce ethnic specialty crops.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There are over 160,000 individuals legally living within 75 miles of Jefferson County, in the eastern panhandle, who were born outside the US. From 2000 to 2010 there was a 239% increase in number of persons of Hispanic or Latino origin and it is unclear how many undocumented immigrants also live in this area. This is a largely untapped consumer population. However, in Jefferson County, we have a deficit in production. When you can sell all you raise, it is difficult to convince people to try completely new crops.

What has been done

Extension educators in the eastern panhandle of WV have focused on introducing ethnic specialty crops. This year we hosted a farm tour for UDC ethnic specialty crops farmers. They visited our largest farmers market, local farms, and our urban Ag demonstration. To increase traditional specialty crops, we are adding a greenhouse with funds from the county revolving high tunnel loan fund.

Results

This year, four specialty producers have become fully operational. A new aqua-ponics producer has begun production. One WV ethnic producer visited UDC farms to consider his options to produce ethnic specialty crops.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges
- Other (funding)

Brief Explanation

Normal problems for small farmers related to production costs and market factors.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluation for the **WV Urban Agriculture Conference** includes the amount of funding raised for the conference, number of attendees, and overall conference evaluation results from participants.

Evaluation for these methods are varied, based on the activity. Corresponding to the numbered list above, evaluation data include:

1. Number of community gardens served
2. Number of active participants and contacts through online media
3. Amount of funds secured and partners involved

4. Number of participants

5. Number of contacts made with local government members concerning urban agriculture

Fifteen partners from 12 agencies were involved in the planning process and contributed \$12,000 in funding to get the conference running. Beyond all of the planning committee's expectations, 232 individuals attended the two-day conference. Of responses to the post-conference evaluation, 97 percent of respondents categorized the conference as either very good or excellent, and 100 percent indicated gaining at least one new skill and learning about one idea during the conference.

WVU Plant and Pest Diagnostic Clinic obtained over 400 samples which is double compared with 2013. This increase in sample was attributed to behavioral changes of clientele on making pest management decisions based on diagnostic data. Recommendations and follow up conversation with those clientele revealed that they improved their knowledge on the importance of diagnostics and made decisions to collect samples, fill out Clinic form and mail those to Morgantown. Out of those 400 clients, 50 percent indicated that they did it because of the improved awareness and would like to do the same if they encounter pest problems in the future.

Key Items of Evaluation

The WV Urban Agriculture Conference was held for the first time in 2014. Evaluations show a large of collaboration among agencies in Charleston, WV. Evaluations indicate that participants learned skills they can use to conduct agriculture initiatives in urban areas. Evaluations show that citizens of WV are making pest management decisions based on diagnostic data.