

HOOKED ON HYDROPONICS AWARD WINNERS Evaluation Summary – 2007



The National Gardening Association surveys award recipients to capture quantitative data on the impact of this program. The following is a summary of results from winners of the 2007 award cycle.

- Award package: Hydroponic system (approximate value \$750)
- Number of applicants: 137
- Number of recipients: 24
- Number of evaluation respondents: 20*

Following is a summary of the highlights from those responses.

Number of participants in award-winning programs:

Ages 6-8 (grades 1-3).....	62
Ages 9-11 (grades 4-6).....	211
Ages 12-13 (grades 7-8).....	238
Ages 14-18 (grades 9-12).....	1,459
Adults (age 18+)	38
Total participants	2,008

Demographic information

Anglo American	56%
African American	17%
Latino	16%
Other	6%
Asian.....	4%
Native American	1%
Female.....	66%
Male.....	34%
Eligible for free or reduced lunch program	27%

Months of the year respondents conducted gardening programs:

Average.....	6 months/year
Range	2–12 months/year

Hours per week a participating child/youth was involved in gardening activities:

Average.....	4 hours /week
Range.....	1–15 hours/week

Type of audience participating in these programs:

In-school	80%
After-school.....	40%
Special needs	35%
Gifted & Talented.....	20%
Community gardeners	10%
Summer program/camp	5%
Youth club	5%

Location of winners:

Urban.....	42%
Suburban.....	32%
Rural.....	26%

Program continuation:

Respondents indicating they plan to continue their program next year	90%
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Program leaders noted participant improvements in these characteristics:

Self-confidence	95%
Attitude towards school	95%
Environmental attitudes	90%
Leadership skills.....	90%
Social skills	90%
Scholastic achievement	75%
Community spirit.....	65%
Volunteerism	50%
Nutritional attitude	45%
Motor skills	35%

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Students now know how to raise food using complex and basic hydroponic systems, and they have learned a great deal about plant propagation, growth, fertilization, and harvesting. They used technology (pH and nutrient testing), created and maintained a successful project, and worked together as a team. They have gained responsibility and self-confidence.

— Tara Cardoza, Brady Exploration School, CO



*Winners failing to submit an evaluation are ineligible to apply for future grants. Two winners requested an extension because their programs are still in progress.

Reported evidence documenting the effectiveness of these programs:

Positive feedback from participants.....	75%
Positive feedback from administrators.....	75%
Positive feedback from family members	65%
Positive community feedback	35%
Funding and donations	35%
Awards and recognition	35%
Decreased disciplinary actions.....	30%
Positive survey results	30%
Improved attendance rates	25%
Improved test scores.....	10%



During the past year the plant science research our students conducted integrating the use of hydroponics has helped this program become the national FFA agriscience champion.

— Daniel Muller, High Point Regional High School, NJ

Subjects taught through these programs:

Science	95%
Health and nutrition	50%
Community service	30%
Interdisciplinary	25%
Math	15%
Intra/ interpersonal relationships	15%
Cultural studies/issues	10%
Social studies.....	10%
History.....	5%

Percentage of time spent on instructional techniques (note: this is the average of all the responses for each technique):

Student-led investigation/ hands-on activities.....	39%
Collaborative project work	22%
Adult-led investigation/ hands-on activities	18%
Independent Learning.....	14%
Lecture	12%

Source of curriculum used by gardening programs:

Original material.....	70%
Combined materials from numerous sources	55%

Nonprofit organization (e.g., NGA or Life Lab).....	20%
State education department.....	20%
Cooperative Extension (e.g., 4-H or JMG).....	10%
School district	5%

Compliance with State and National Education Standards:

Programs connected to State and National Education Standards.....	75%
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Importance of linking program to the standards:

Mandatory	25%
Very important.....	30%
Important.....	15%
Somewhat important.....	10%
Not important.....	20%

Approximate amount of money spent on these programs:

Less than \$250.....	35%
\$250 to \$500	30%
\$500 to \$1,000	5%
\$1,000 to \$1,500	0%
\$1,500 to \$2,000	5%
\$2,000 to \$2,500	10%
More than \$2,500.....	15%

Approximate value of in-kind donations to gardening programs:

Less than \$250.....	60%
\$250 to \$500	5%
\$500 to \$1,000	20%
\$1,000 to \$1,500	10%
\$1,500 to \$2,000	0%
\$2,000 to \$2,500	5%
More than \$2,500.....	0%

Percentage of funding these programs received from other sources (note: this is the average of all the responses for each source):

Grants	70%
School or School District Funds	18%
Instructor's pocket.....	4%
Donations	4%
Parent or Volunteer Organizations	3%
Fundraising	2%

Type of organizations responding:

Public school.....	80%
Charter school	10%
Private school.....	5%
Other	5%

Documented media publicity:

Newsletter articles	27
Newspaper articles.....	15
Web site features.....	15
TV features.....	2

Community interaction and additional impacts noted by respondents:

Funding our botany program is always a challenge so grants like these help keep our program alive! Thank you so much!

— Andrea Santilli
Navarre High School, FL



This grant had a huge impact on my chemistry students. Many gave freely of their time before, during, and after school to contribute to the success of the project. My class also expanded the project to include special education students.

— Jeff Bracken
Westerville North High School, OH



Our population is comprised of students who are autistic and/or multiply disabled. Most are moderately to severely impaired. This project allowed them to experience the basic tenets of science exploration: experimentation, observation, communication, data collection, and hypothesis. It enabled them to participate in activities that were grade and age appropriate. Next year we will use the hydroponic garden when school starts to begin a food garden and cooking project as well.

— Debbie Nappi, Bright Beginnings Learning Center, NJ



In this project students conducted scientific investigations on plant

growth, using both hydroponics and traditional soil techniques. After conducting the study students wrote scientific reports describing their methods, the data collected, and their conclusions, and they made graphs and tables of their results. Working cooperatively led to improved communication and teamwork skills, and students also gained a better understanding of crop and plant production. They couldn't wait to see how tall their plants were each day (one group had a goal of raising a one-meter-tall green bean). My class also brought other students to the classroom to explain hydroponics.

— Melissa Smith,
Alpena High School, MI



This program helped my students to realize that their own actions can make a difference in their community. In an interview by the local paper, students commented: "I believe the garden symbolizes that there can still be peace in the community and hope for us all. It raises awareness." "Really? We can eat what we grow in [the hydroponics set up]? That's cool."

— Tanya Turner,
John Hancock High School, IL



The hydroponics program at our middle school was a source of daily discussion among students in all grade levels. Many hadn't realized they could grow plants with only water. The hydroponics program will be a focus of fundraising for the Technology Education program for next year.

— Johann Odom, L. Douglas Wilder Middle School, VA



My students loved the hydroponics system. I have taught this class for 14 years and previously we grew plants in soil with only moderate success. My students had never seen anything like this — everyone was very excited when the plants began to sprout after a few days. Our plants did so much better in the hydroponics system that students were able to eat a good crop of home-grown tomatoes and lettuce. Overall, it was an excellent experience for everyone.

— Donald Holzgrafe, Kealing Middle School, TX