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PLAN THE GARDEN, PRESERVE THE HARVEST!

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ABSTRACT

In 2020, COVID-19-related state lockdowns contributed to a sudden surge of home gardening and home food preservation interest across the United States. While the number of home gardeners and home food preservers increased drastically, many consumers lacked personal knowledge or awareness of available resources for their newly acquired hobbies. The expansion in home gardening and home food preservation activities contributed to necessary supplies becoming scarce through traditionally accessible commercial avenues. This shortage left many consumers unaware and with a lack of knowledge regarding purchasing options for essential equipment and supplies to properly conduct these activities.

INTRODUCTION

In the early spring of 2020, consumers nationwide were faced with limited purchasing options from food access to seed sources (Yu, 2020). One state Extension Master Gardener program even offered trainings available for free online, to meet the increased backyard gardening demand from consumers (Yu, 2020). As a Washington State University (WSU) article shares, “not since the Great Canning Jar Lid Shortage of 1975 has [Anna] Kestell, seen such a shortage of supplies” (Janovich, 2021). Anna Kestell is a WSU Food Preservation/Safety Education Coordinator. Individuals were not alone in their frustration, as Cooperative Extension offices were flooded with traditional clientele and new consumers alike, attempting to access services (Dennis, 2020). In addition to concerns for accessing supplies from gardening to canning (Smith, 2020), Cooperative Extension hurried to provide access to trainings for general consumers (Ambrose, 2020).

Traditionally, Extension programming is provided in-person, but assessing clientele needs and interests can identify the most effective communication method (Kness et al., 2021; Marrison, 2020). Recognizing the need to provide the opportunity for individuals to access current, research-based and safe content, Extension Educators in Idaho with programming expertise in Horticulture and Family & Consumer Sciences developed a cross-discipline program, “Plan the Garden, Preserve the Harvest!” This program was developed specifically for those new to these topics and intended for Idaho clientele.

METHODS

This one hour and thirty-minute program was designed as a virtual presentation to meet the group gathering limitations and social distancing guidelines which were imposed by the state of Idaho and University of Idaho at that time. In addition to meeting group gathering stipulations, participation was not limited, thus providing the opportunity to reach a larger audience. Introductory horticulture content was shared for the first half of the presentation, and an overview of home food preservation options were presented during the second half of the allotted presentation time.

In January of 2021, one “Plan the Garden, Preserve the Harvest!” program was delivered online, via the Zoom platform in southern Idaho. The program’s cross-discipline content was purposeful in attempting to educate clientele interested in learning more regarding two related topics at one time. Knowing the importance of marketing to gain an audience and to inform consumers with various needs and interests of this opportunity, the program was marketed through multiple avenues (Barnes, 2016; Mills et al., 2021). By reaching out to established community partnerships, this class was shared via social media platforms by 15 community entities, expanding marketing efforts without requiring advertising funds.

Furthermore, because the program was available free of charge and online, the program’s range of participants was vast, reaching more than 150 individuals who attended live. The successful implementation of the program in southern Idaho prompted a team of educators to conduct the cross-discipline program in northern Idaho. The northern Idaho virtual implementation took place in the month of March with over 50 participants joining live.

A post-program survey that incorporated horticulture and food preservation content questions was shared with participants one week following the class. This survey intended to gauge participant learning and planned action, following their participation in the class. Data collected across sites was analyzed as a whole, encompassing both program implementations.

RESULTS

Of the 211 unique contacts that attended the live "Plan the Garden, Preserve the Harvest!" program, 43 individuals responded to the survey in its entirety and 58 respondents completed the demographics question set. Of these respondents 41 attended the southern Idaho program and 17 attended the Northern Idaho program. Participants in the survey varied from 21 years of age to more than 60 years of age. The educational background ranged from high school graduate/GED to a graduate degree with 43% of participants indicating they had earned a 4-year degree. Respondents to the survey were 83% female.

An end-of-session evaluation was conducted with program participants using a pre-and-post-test survey. Their responses were recorded on two major variables: (1) their level of understanding and (2) their level of confidence to apply the learned skills on 15 different topics presented in the class. Forty-eight participants reported their self-measured assessment for understanding, and 41 reported their confidence level before and after the program. Both variables were measured on a 5-point Likert-type scale (1= Very low to 5 = Very high). The paired sample *t*-test showed a statistically significant difference in respondents' overall understanding [t (df = 15; α =.05) = 26.19, p = 0.0002] and their overall level of confidence [t (df = 15; α =.05) = 9.53, p = 0.0009] before and after participating in the program. The mean score and the standard deviation are presented in Table 1.

Table 1. Pre-and-Post-test Knowledge Score for Plan the Garden, Preserve the Harvest! class.

Variables	Before Program		After Program	
	Summated Mean	Standard Deviation	Summated Mean	Standard Deviation
Understanding	2.62	1.001	3.25	0.79
Level of Confidence	2.51	1.07	3.48	0.84

Results show that the program made a statically significant positive change in participants' understanding and confidence to apply the learned skills in various topics related to garden productions and preservation of produced food.

A total of 22 knowledge, skill, and perspective outcomes were measured in the post-program evaluation. Respondents were asked to "Indicate your level of understanding…" and "Indicate your level of confidence…" for program topic objectives for food preservation (Table 2) and gardening (Table 3) before and after the program. Mean scores were calculated on a scale of 1 being *very low* to 5 being *very high*. Results for food preservation showed the most increase in confidence for F*reezing Fruits, Vegetables & Herbs*. Gardening topic objectives showed the greatest confidence increase in *Layout of the garden using spacing guides* and *Family Garden and Preservation Assessment.*

Table 2. Understanding and confidence levels of preserve the harvest topic objectives (understanding n=48, confidence n=41).

Topic Objective	Increase in Mean Score	
	Level of participants' understanding	Level of participants' confidence
Canning Fruits & Vegetables	0.69	0.93
Dehydrating Fruits, Vegetables & Herbs	0.71	0.9
Different preservation methods available in the home	0.77	0.83
Food Handling and preparation guidelines	0.77	0.95
Freezing Fruits, Vegetables & Herbs	0.77	0.96

Table 3. Understanding and confidence levels of plan the garden topic objectives (understanding n=48, confidence n=41).

Topic Objective	Increase in Mean Score

	Level of participants' understanding	Level of participants' confidence
Container Garden Production System	1.06	0.83
Family Garden and Preservation Assessment	0.79	1.12
Interplanting Production System	1.02	1.09
Layout of the garden using spacing guides	0.92	1.12
Planting dates based on USDA Hardiness Zone	0.85	1.1
Raised Bed Garden Production System	1.08	0.8
Relay Planting Production System	0.96	0.85
Succession Planting Production System	0.96	1.05
Vertical Garden Production System	1.06	0.95
Victory Garden Production System	1.1	0.93

Respondents indicated “To what extent did this class improve your skills to use preservation information you learned?” and “To what extent did this class improve your skills to use gardening information you learned?” (Table 4). When asked about skill improvement using *very highly* and *highly* 78.27% (n=46) for gardening and 67.39% (n=46) for preservation revealed the class improved their skills.

Table 4. Percentage of participants reporting skill improvement for plan the garden and preserve the harvest. (n=46).

Identifier	To what extent did this class improve your skills to use…	
	Plan the Garden	Preserve the Harvest
Very Highly	19.57%	15.22%
Highly	58.70%	52.17%
Moderately	13.04%	23.91%
Slightly	4.35%	4.35%
Not at all	4.35%	4.35%

For usefulness of information learned in the class, 91.3% (n=46) of the respondents rated the gardening information for home garden production *Extremely Useful* or *Very Useful* and respondents indicated 86.95% (n=46) for preservation information for home consumption (Table 5).

Table 5. Rating percentage of participants for usefulness of gardening and preservation concepts (n=46).

Ranking	Usefulness of plan the garden information learned in class for home garden production	Usefulness of preserve the harvest information learned in class for your home consumption
Extremely useful	39.13%	34.78%
Very useful	52.17%	52.17%
Moderately useful	6.52%	6.52%
Slightly useful	2.17%	6.52%
Not at all useful	0.00%	0.00%

Respondents were asked to “List a practice you will implement based on what you learned in class”. Of the 43 entries provided during the survey, 72 individual response topics were themed into the 22 knowledge, skill, and perspective outcomes. Four of those outcomes were identified as 10% or greater of the responses provided by the respondents. The top outcomes were 1) implement new techniques or recipes for canning fruits & vegetables, 2) apply crop rotations to the garden, 3) how to dehydrate fruits, vegetables & herbs, and 4) how to apply succession planting production procedures in the garden.

Respondents were asked to share any additional comments about the class. Some survey responses include:

“Very useful information with access to good resources.”

“The class was very informative and thorough. I was asked to teach a class in my local town on the topic of gardening and wanted to attend to see what resources were available through the extension office and share information with those who attend. Thank you for the great information.”

“Thank you for providing digital resources I can access in the future as I’m truly a beginner and won’t remember everything covered in class.”

“Appreciate your preparation, sincerity, all the answers to questions and your enthusiasm. Well planned, motivating, and educational presentation.”

“My knowledge on these topics was improved by the class. My skills on the topics will improve as I put them into practice, and I have successes in the garden.”

“I really appreciate being able to attend online!”

“The class was well presented and covered a wide range of topics that are valuable to beginners or a refresher for experienced gardeners and preservers.”

DISCUSSION AND CONCLUSIONS

The collaborative work reported here has continued to be developed and implemented throughout the summer of 2021. As program participants desire more in-depth content, additional topic-specific classes are being offered virtually to extend the foundational information shared during the initial “Plan the Garden, Preserve the Harvest!” class. As these virtual classes continue, they demonstrate that purposeful program development and timely implementation can provide research-based content to Extension consumers. Extension can remain in the forefront by applying successful marketing strategies to deliver quality educational programming for clientele. Structuring virtual classes that emphasize cross-discipline programming can be replicated across all Extension content areas.

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