Leveraging the Expertise of UC Cooperative Extension to Increase Youth Knowledge of Agriculture and Local Commodities

Chelsey L. Slattery1,2; Rita Palmer1,2; Suzanne Lawry-Hall1,2; Alexandra Falk2,3, and Jona Pressman2,3
1University of California Agriculture and Natural Resources; 2University of California Cooperative Extension, Butte Cluster; 3UC CalFresh Nutrition Education Program

Introduction

• Educating youth on agriculture related topics and local commodities is a priority of the University of California Cooperative Extension (UCCE).
• For over ten years, UCCE programs in Butte County in collaboration with Butte County’s Farm Home & 4-H Support Group has hosted a Student Agricultural Field Day (SAFD) held at the Patrick Ranch Museum in Durham, CA.
• The Patrick Ranch Museum is an outdoor educational facility dedicated to enhancing people’s understanding and appreciation of the community’s rich agricultural heritage.
• The goal of this event is to increase agricultural literacy and knowledge of local commodities for students in Butte County.

Methods

• UCCE Farm Advisors, UC Master Gardeners, Butte County’s 4-H Youth Development Program, and local producers host interactive stations.
• Fourth-grade classes from Butte county schools that participate in the Shaping Healthy Choices Program, a program with strong ties to agriculture, participate in the event.
• In 2017, students rotated through five stations: walnuts, rice, honeybees, entomology, and bio-security. Students spent 25 minutes at each station.
• A subset of students (n=46) completed a pre-and post-event survey assessing their knowledge of agriculture.
• The pre-and post-survey consisted of ten multiple choices questions based on the five stations that the students rotated through and one open-ended question.

Results

• When comparing overall pre-test and post-test survey scores for students who attended SAFD (n = 46), the average pre-test % was 28.0 and the average post-test % was 55.0, yielding a % difference of +27.0.
• Overall student knowledge of the gender of worker bees increased from pre = 15% to post = 81%.
• Student awareness that insects have three pairs of legs increased from pre =26% to post = 54%.
• Student understanding that the outermost covering of a walnut is the hull increased from pre = 9% to post = 77%.
• Student understanding that bio-security helps to prevent the spread of disease and keep humans and animals healthy increased from pre = 52% to post = 79%.
• Student understanding that rice is grown in the Sacramento Valley increased from pre = 35% to post = 48%.
• Qualitative data on students knowledge of agriculture was collected from students both pre-and-post event by asking students one open –ended question, “What do you know about agriculture?”.

<table>
<thead>
<tr>
<th>What Do You Know About Agriculture? (Pre-Event)</th>
<th>What Do You Know About Agriculture? (Post-Event)</th>
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</thead>
<tbody>
<tr>
<td>“Agriculture is farming. Barns, hay and tractors.”</td>
<td>“Farmers growing crops and beautiful plants. Some grow walnuts. Feed and take care of animals. Protect crops from insects.”</td>
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<tr>
<td>“I don’t know what that is”</td>
<td>“When you plant rice you let it grow a little first. Then you start growing the rice plant in about five inches of water.”</td>
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<tr>
<td>“Nothing about it. I do not know nothing about it so please show me.”</td>
<td>“I know that animals maybe have agriculture and I want to tell you to wash your hands before and after touching animals because you can spread germs and diseases.”</td>
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<tr>
<td>“They grow crops, they have tons of animals. Agriculture is a farm.”</td>
<td>“Agriculture is something that is very expensive and a lot of money.”</td>
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</tbody>
</table>

Conclusions

• Overall, results indicate that there was a significant increase (p = 0.0042) in student knowledge as a result of participating in the 2017 SAFD.
• The results from the current study suggest that well-planned outdoor learning experiences may be a valuable tool for increasing agricultural literacy and knowledge of local commodities, and to provide students with unique opportunities for learning that are not typically available within the standard classroom setting.

Funding

• Funding for this annual event is provided by the Butte County Farm, Home & 4-H Support Group. Their mission is to increase agricultural literacy among members of Butte County.

Acknowledgements

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