

## **Maine 2004 3-A-Day of Dairy Grant Final Report**

### **University of Maine Cooperative Extension Dairy is Delicious Project**

UMCE's Eat Well Nutrition Education Program will facilitate exciting and experiential-based learning activities aimed at increasing dairy consumption among 3rd grade students at Reiche and Riverton schools in Portland. Project activities will focus on the entire dairy production process, from farm to table. A connection between dairy farming and dairy products will be established through field trips to a local dairy farm and Maine Agricultural Education Day at the Cumberland Fair and interactive classroom lessons.

In a collaborative effort, the Cumberland County All-Star Dairy 4-H Club will be active in project planning and educational delivery for the students at Reiche and Riverton schools. 4-H participants will be in middle school, grades 6 - 8. This peer-teaching arrangement will foster greater understanding of dairy farming for urban youth, as well as expose the more rural members of the 4-H Dairy Club to Portland's growing ethnic population.

Specific emphasis will be placed on the 3-A-Day of Dairy educational message, and its place within the USDA's Food Guide Pyramid and Dietary Guidelines for Americans. Activities will be designed for students to share their learning experiences with their peers and family, thus empowering the program participants to be advocates for a lifetime of healthy eating.

In addition to teaching the 3-A-Day of Dairy message, this experiential-based initiative will promote local dairy farms, increase awareness of the 4-H Program and expose urban school children to Maine's rich agricultural heritage.

### **Education Objectives**

Of the students in participating classrooms (n = 74):

- 95% will be able to identify at least 3 health benefits of choosing dairy products as part of a balanced diet. (Meets Learning Results HA. Health Concepts Elementary Grades 3 - 4, 1.)
- 95% will increase servings of dairy products to meet recommended intakes of at least three a day.
- 75% will increase the variety of dairy foods they choose to meet recommended intake of three servings a day.
- 95% will increase their knowledge of the origin and production process of at least three dairy foods.
- 90% will utilize at least one media outlet (video, audio or print) to encourage other youth to consume dairy products.

**Of the participating 4-H Youth (n = 40):**

- 50% will demonstrate youth leadership skills by participation as peer teachers in the Dairy is Delicious project through planning and presenting at least two classroom lessons.

**Of the classrooms that participate in the ME Agricultural Day at the Cumberland Fair (n = 1800 students):**

- 75% will complete the Dairy Detective Adventure to demonstrate their knowledge of dairy-related information and health benefits of consuming dairy foods.
- 100% will receive a teacher's resource toolkit to increase their access to educational dairy information.

**Results/Outcomes**

Over 70 students, from four classrooms at Reiche and Riverton schools participated in the University of Maine Cooperative Extension's 3-A-Day of Dairy Project from September to December, 2004. The project objective was to include students in experiential-based learning activities to improve their knowledge and dietary behaviors related to dairy foods. Project activities focused on the entire dairy production process, from farm to table. A connection between dairy farming and dairy products was established through field trips and interactive classroom lessons. The participating classrooms included three 3rd grades and one English as a Second Language 4th - 5th Grade. Participating students were: 62% female, 38% male, 38% African/African American, 15% Asian, 2% Hispanic and 45% Caucasian.

As Dairy Detectives, the students engaged in hands-on activities like milking a cow on their class field trip to Pineland Farms and uncovering clues in the 4-H Exhibition Hall, Dairy Barns and Food Midway to solve the Dairy Detective Scavenger Hunt at the Maine Agriculture Day at the Cumberland County Fair. Interactive classroom lessons were designed to help meet the Maine Learning Results for Health and included these topics: Dairy Foods & Dairy Servings, Moo to You: Dairy Origins, Calcium and Bone Health. Each 45-minute classroom lesson included hands-on activities to reinforce the main concepts taught. Activities and companion materials were designed for students to share their learning experiences with their peers and families, thus empowering them to be advocates for a lifetime of healthy eating. Through journal writing in the students Dairy Journals, they were able to express their opinions about new dairy foods they had tried, dairy foods that they like, how many servings they had eaten from the dairy group and to answer the dairy question of the week.

Twelve members of the Cumberland County All-Star Dairy 4-H Club were included in the project as peer-teachers. This peer-teaching arrangement fostered greater understanding of dairy farming and Maine's rich

agricultural heritage for urban youth, as well as exposed members of the 4-H Dairy Club to Portland's growing ethnic population. Through their participation in classroom lessons, field trips, sharing their personal stories of raising dairy cows and as pen-pal correspondents, 4-H members served as influential mentors who taught the urban students about raising dairy cows and help them to gain a better understanding of the dairy food process.

The project finale included a "Dairy is Delicious" classroom event to share the group projects students had developed. Fellow students were educated and entertained through songs, poems, drawings and skits.

Baseline information indicated that 33% of the participating students consumed less than the 3 recommended servings of dairy each day prior to this project. Dairy Food Frequency Questionnaires collected pre and post program indicated that students made significant changes in the variety and frequency of dairy food consumed. At the end of the program, close to 90% of the students were consuming at least 3 dairy servings each day.

Pre and post assessments of dairy knowledge also demonstrated significant changes. A seventy percent improvement was demonstrated in the students' ability to identify three health benefits of consuming at least 3 servings of dairy each day. Students were also better able to identify dairy foods, dairy serving sizes, daily dairy serving requirements and dairy production techniques.

Participating teachers rated the Dairy is Delicious Project as excellent and indicated that the project did help their students meet Maine Learning Results. The standards that this project helped them to meet were identified as Health Education, Science, Social Studies and Visual and Performing Arts.

To foster project sustainability, eight Dairy is Delicious Teaching Tool Kits were developed and distributed to the four participating teachers and to Regional Supervisors of the Eat Well Program. Over 38 Nutrition Aides will have access to these tool kits to deliver elementary level dairy nutrition education lessons. The toolkits contained resources used in the interactive classroom lessons such as books, National Dairy Council materials as well as pre and post-tests tools. An oral presentation, Experiential-Based Learning and Peer-Teaching Boost Elementary Students Calcium Intake, will be featured at the UMCE Nutrition, Food and Physical Activity Symposium on April 27, 2005. An abstract of the same topic was submitted for consideration as either an oral or poster presentation at the Society for Nutrition Education Annual Conference in July 2005.

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