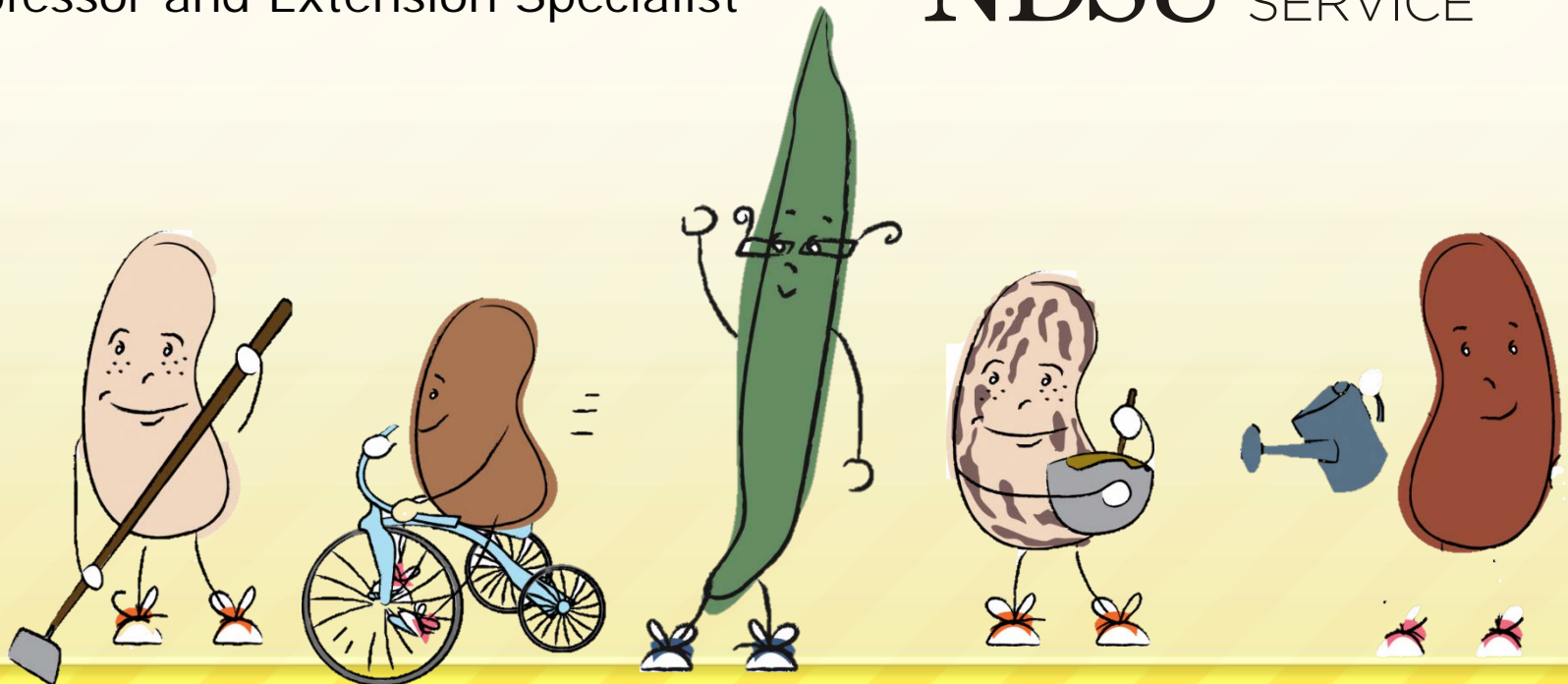


BeanCAP Extension Outreach and Program Evaluation 2012

Julie Garden-Robinson, PhD, RD, LRD
Professor and Extension Specialist

NDSU EXTENSION
SERVICE



Outline

- Evaluation of documentaries
- Preschool bean project(s) update
- National survey update
- Materials development and evaluation

Bean Documentary Evaluation

Methods

- IRB-approved protocol
- Extra credit opportunity in “Plant Sciences/Genetics 315”
 - Option 1: Evaluate documentaries (40 – 50 minutes)
 - Option 2: Write a summary of a research article.
- Process: All done online linked on Blackboard academic site
 - Take pre-survey (SurveyMonkey tool)
 - Watch online video
 - Take post-survey
 - Repeat for second video

Participants (n=255)

Gender

- Male: 52.7%

Age

- Average: 20.9 years

Race

- White: 93.3%
- Black: 2.5%

Class Standing

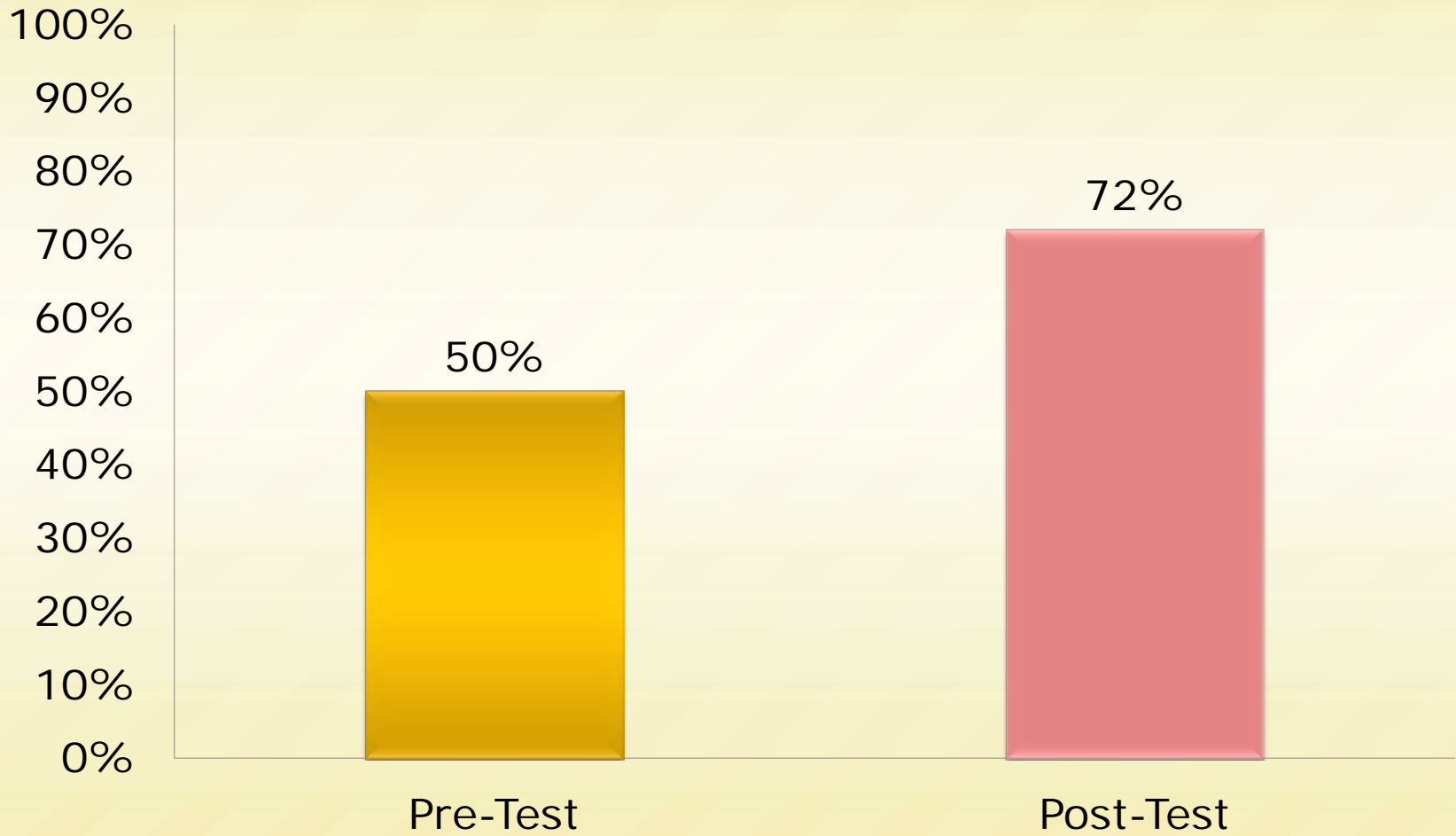
- Sophomore: 35.1%
- Junior: 39.7%

Hometown Location

- Town or City: 47.7%
- Rural: 23.4%
- Farm: 27.2%

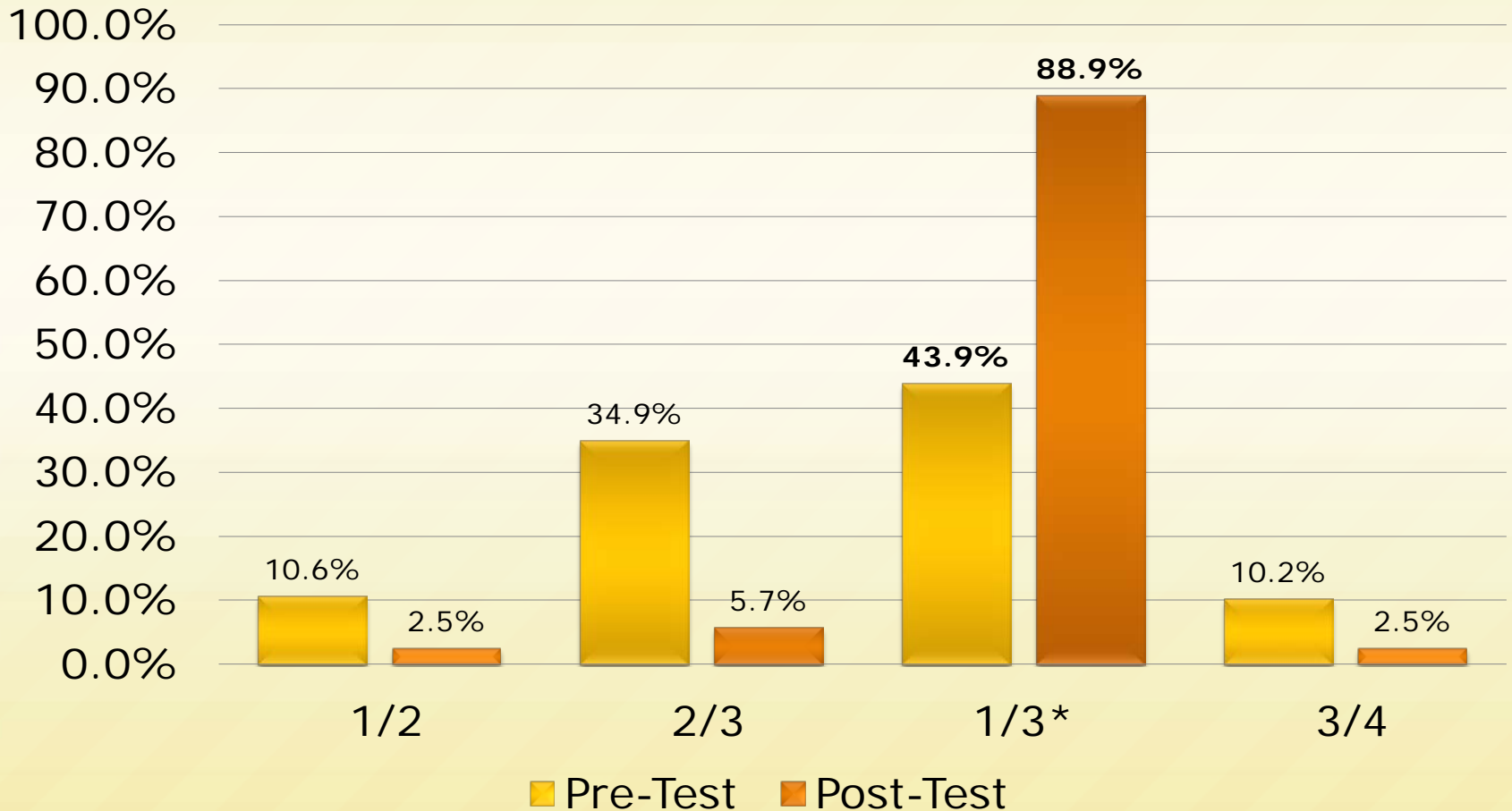
Video #1: Plant Breeding

Percent Correct, Pre-Test and Post-Test

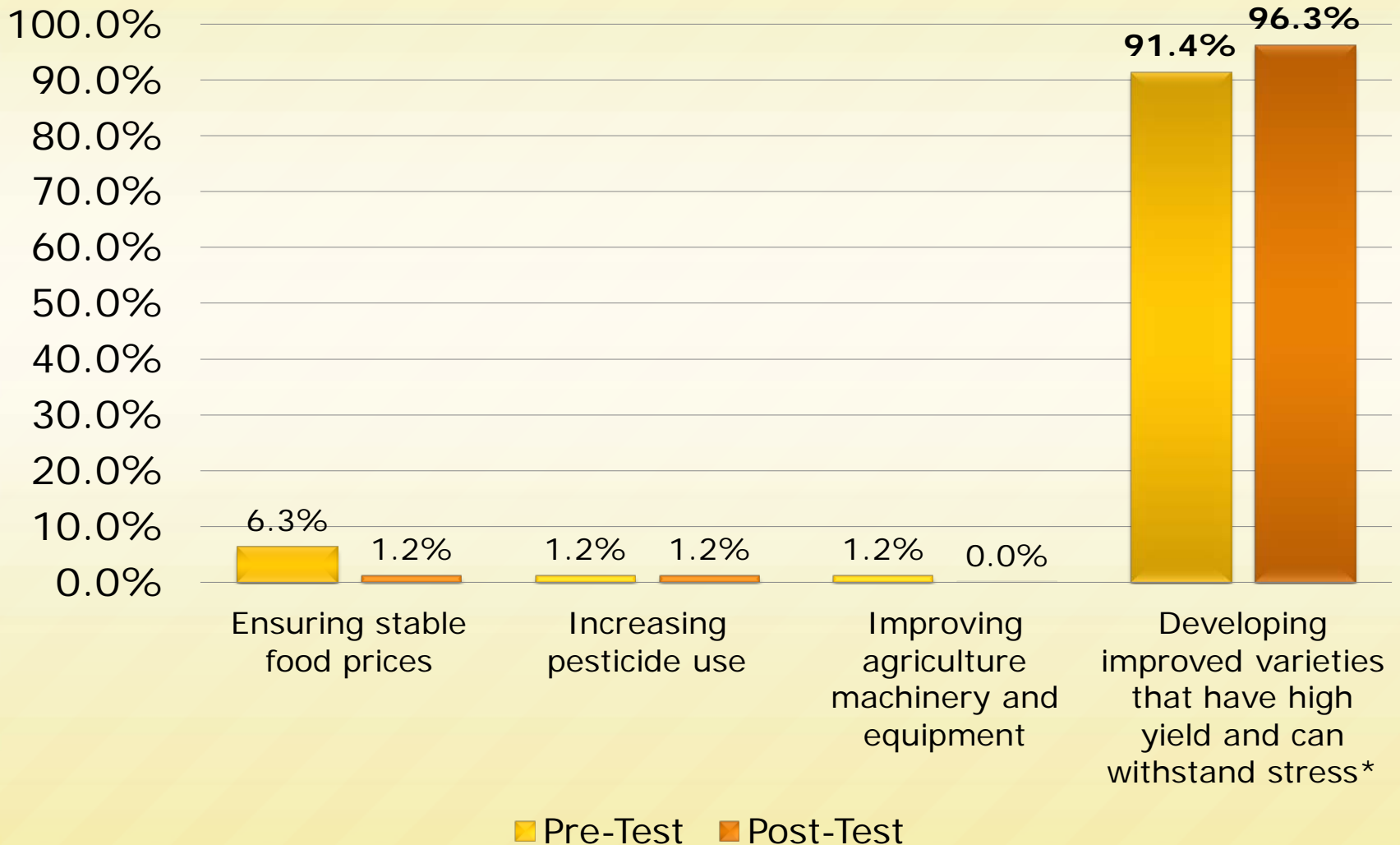


n=255 respondents

Approximately what fraction of the world's children do not have enough food?



What role do plant breeders play in solving world hunger?



What Did You Find More Informative?

Role of Plant Breeding

- “The video raised my awareness on the subject of how important plant breeding is to feeding the world.”
- “How plant breeders are saving lives by the work they do.”
- “The information was very enlightening, as I never thought about world hunger being solved by plant genetic improvements.”

What Did You Find More Informative About the Video?

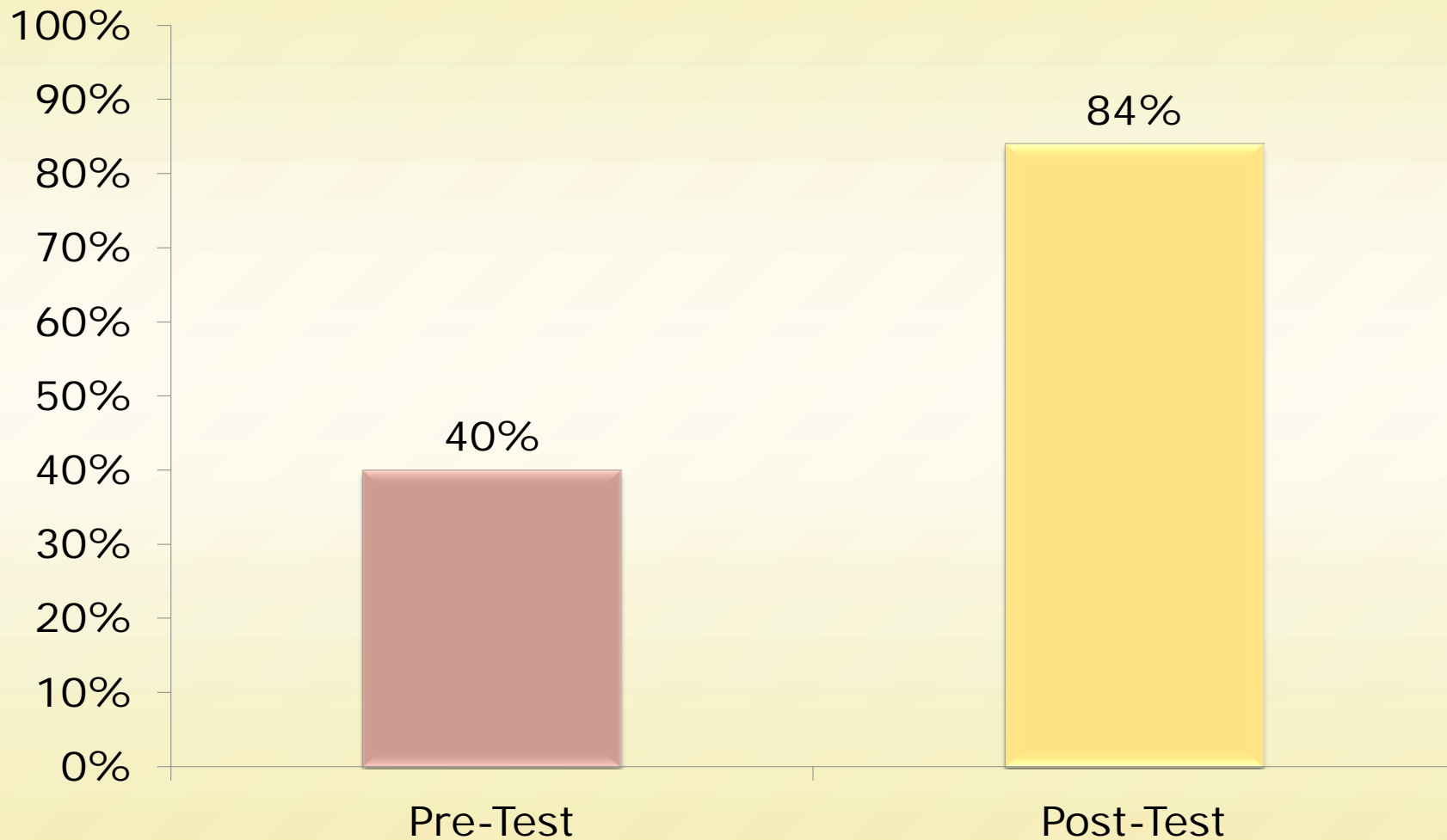
Role of Plant Breeding

- “The statistics about world hunger were shocking and really put into perspective the number of people that still go without adequate food.”
- “The statistical information regarding why food has shortages and how plant breeders are helping improve this problem.”

**The Story of Norman
Borlaug & The Green
Revolution**

The Story of Norman Borlaug & The Green Revolution

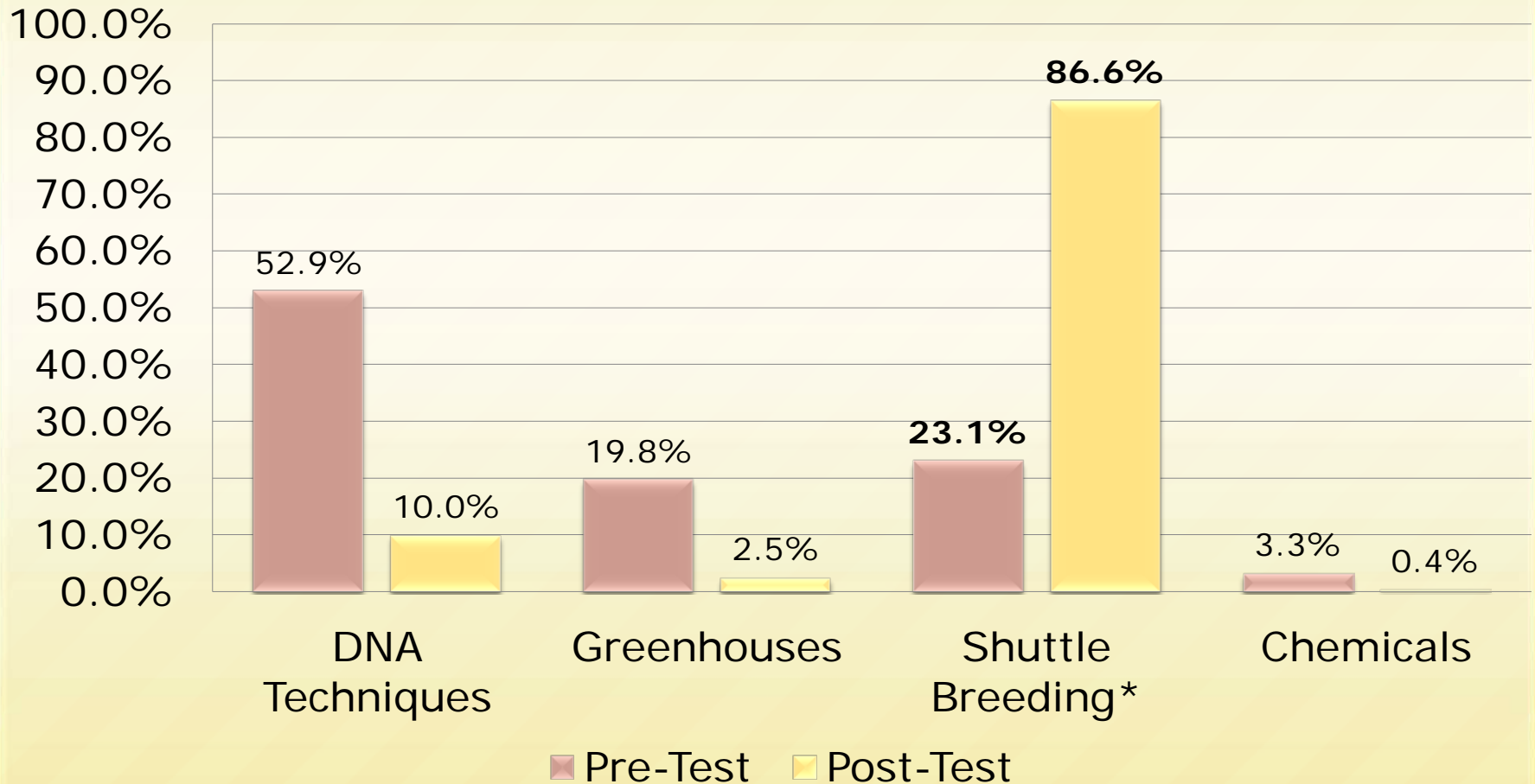
Percent Correct, Pre-Test and Post-Test



n=255 respondents

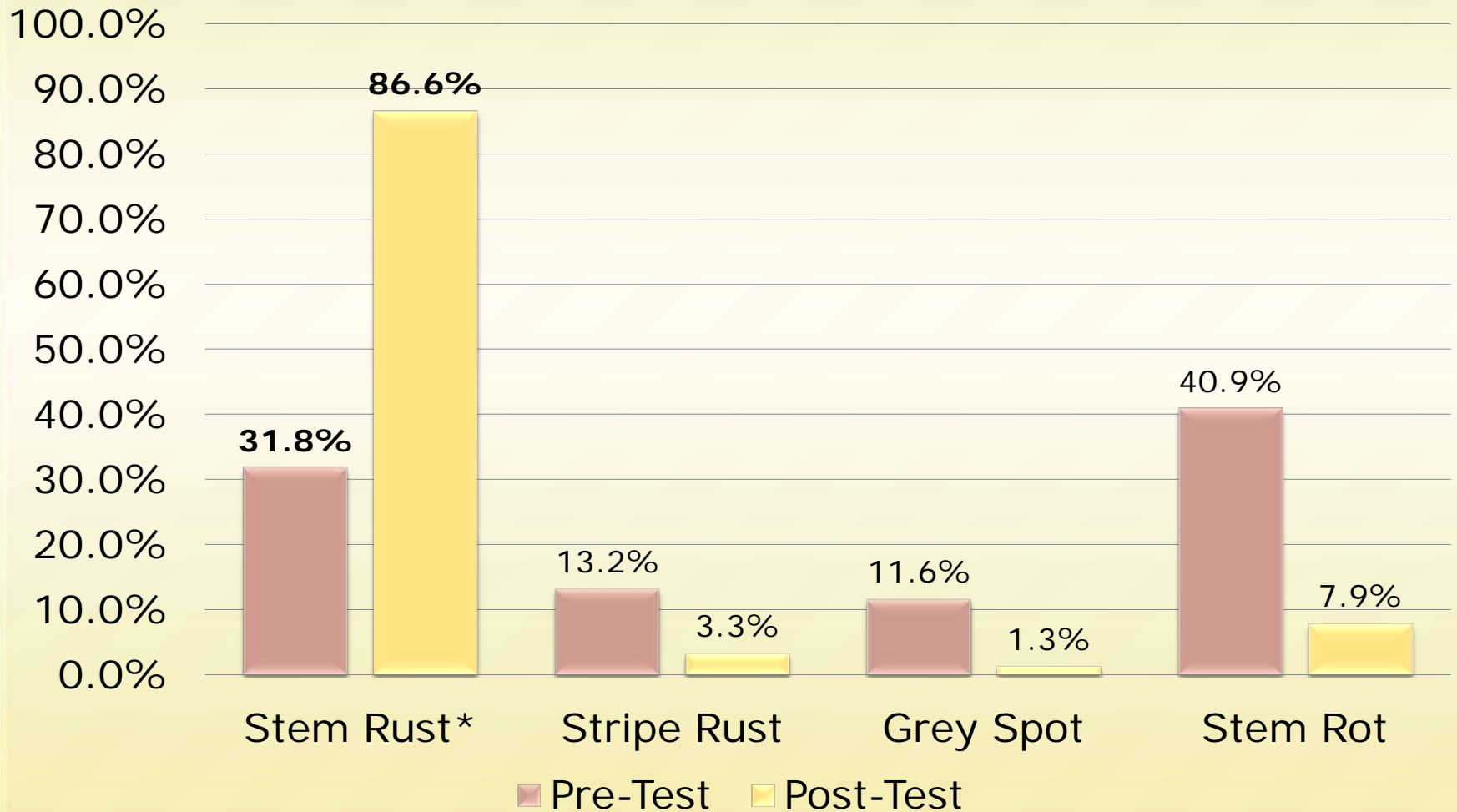
Norman Borlaug & The Green Revolution

What strategy allowed Borlaug and his team to develop new wheat varieties in half the time?



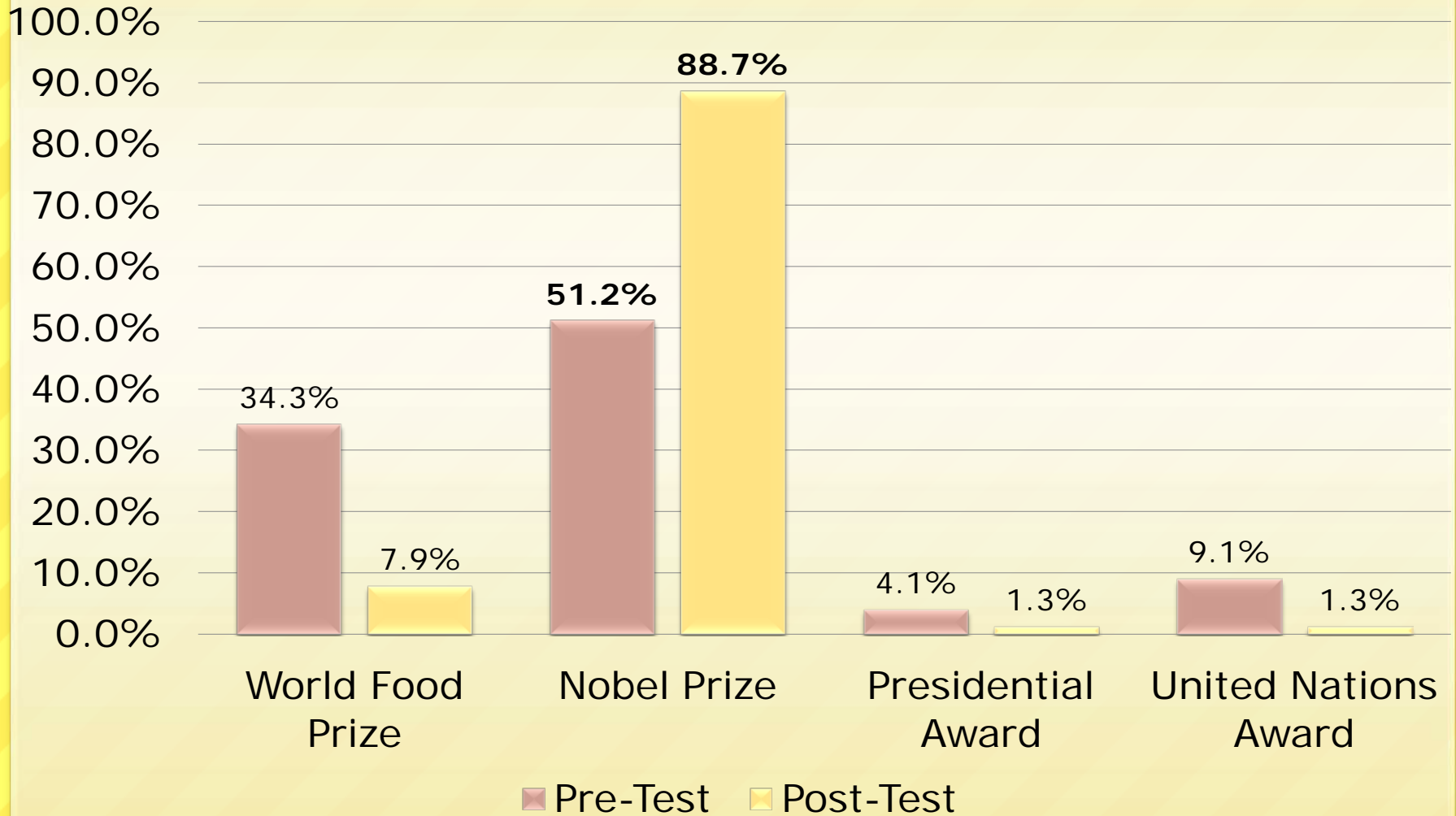
Norman Borlaug & The Green Revolution

Which disease did Borlaug and his team overcome?



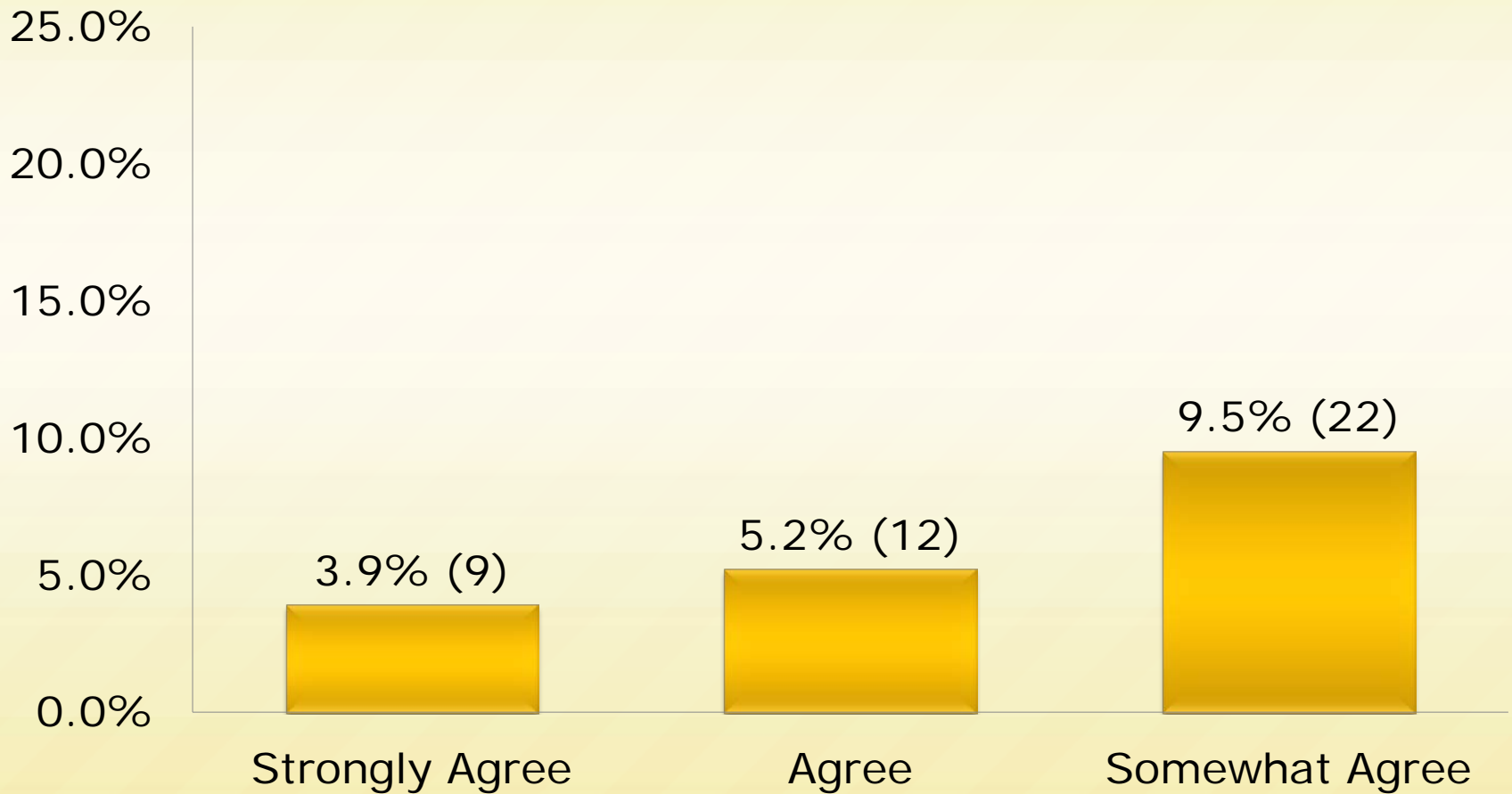
Norman Borlaug & The Green Revolution

What kind of recognition did Borlaug receive for his work?



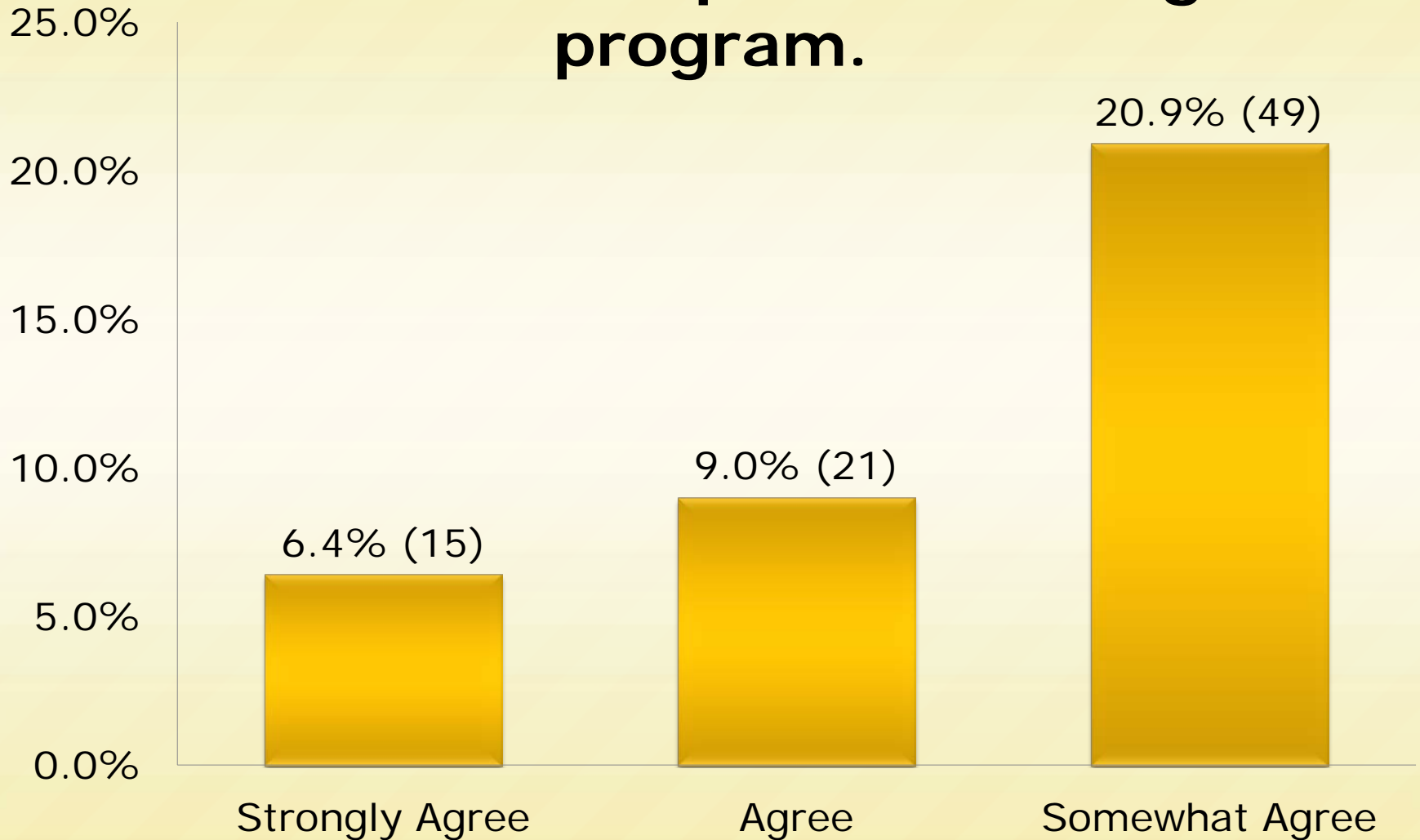
Interest in Plant Breeding Programs

I have thought about enrolling in a plant-breeding program.



n= 231 total respondents;
7-point scale from "strongly agree" to "strongly disagree"

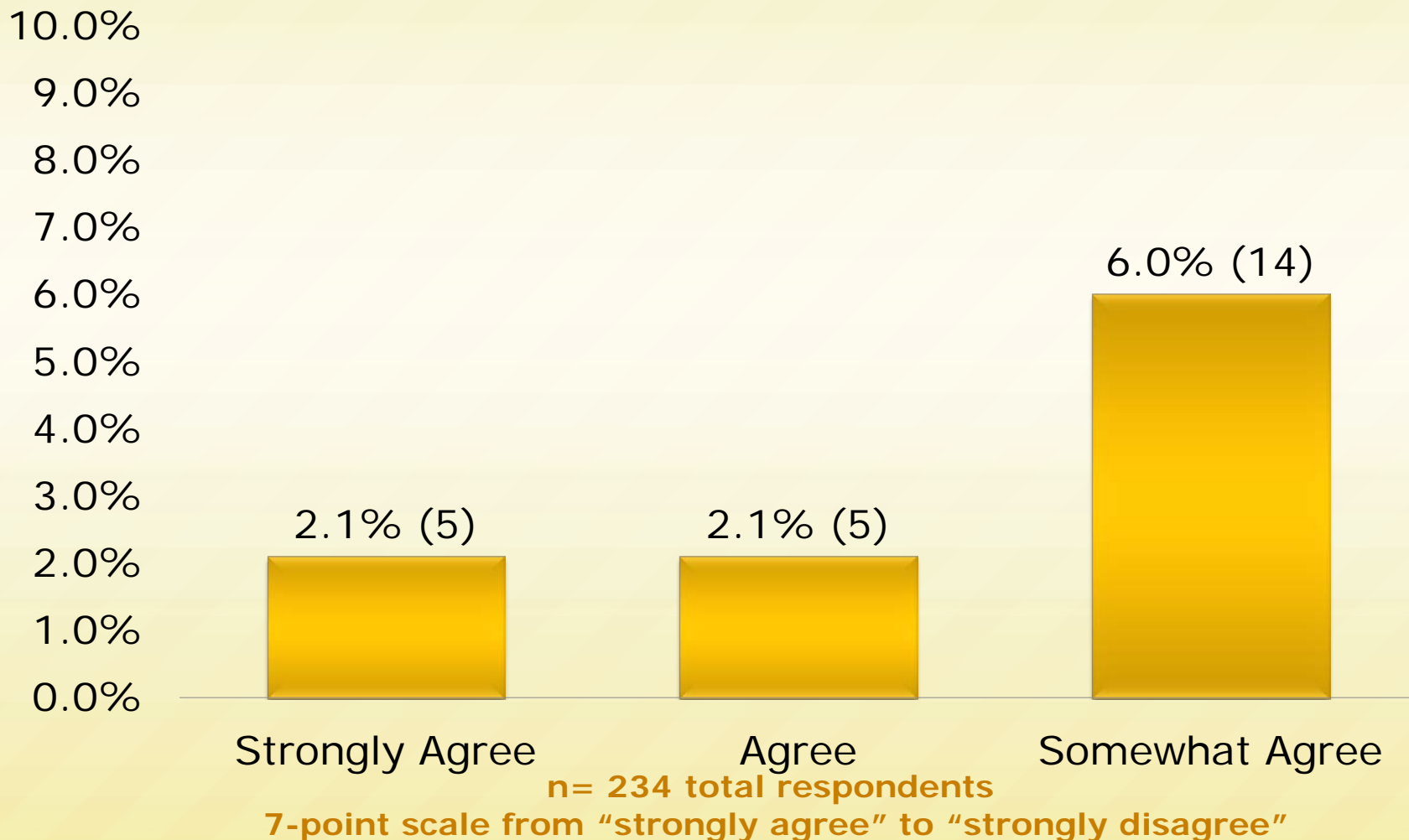
I am interested in learning more about a plant-breeding program.



n= 234 total respondents;

7-point scale from "strongly agree" to "strongly disagree"

At some point in the future, I plan to enroll in a plant-breeding program.



What Did You Find Most Informative About the Video?

Borlaug's Life

- "Borlaug's life story, the ways he improved wheat, and the impact on the rest of the world."
- "How Borlaug changed the world in 3 years."

Impact of Plant Breeding

- "How plant breeding can make a change in the world, even in such a short time."
- "The success of shuttle breeding."
- "I did not know how much impact selective breeding had on the world."

Preschool
Nutrition Education
Project(s)

2011 Preschool Education Project

Participants: 47 families

8 lessons
(2/week for 4 weeks)

Gardening (all summer)

Intern involvement

(NDSU and the Grand Forks
USDA Human Nutrition Research lab)



Objectives

Parents will be able to identify health benefits associated with beans, specifically fiber, protein and folate.

Children will increase their knowledge of gardening, including the lifecycle and plant parts associated with beans.

Children will improve their knowledge of MyPlate and the protein foods group, which includes beans.

Children will increase their awareness of different varieties of beans (dry edible beans and snaps) through identification by color, size and shape.

Children and parents will have the opportunity to taste/try recipes containing beans through hands-on activities and recipes provided to parents.

The participating childcare centers will incorporate beans within their menu plans.

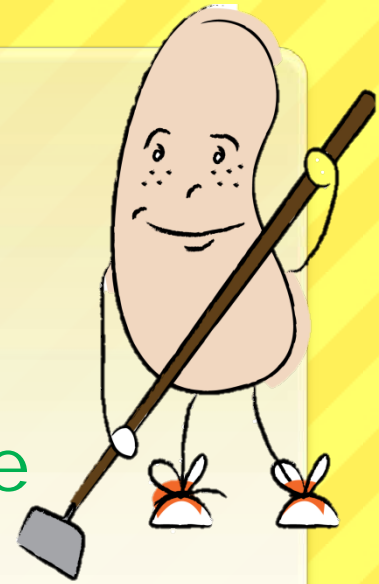
RECIPE	RATING (3-point scale; 3= highest)	WOULD YOU EAT THIS AT HOME?
Black Bean Brownies	2.9	97.9%
Cowboy Beans	2.7	87.1%
Pinto Bean Beef Tacos	2.7	87.5%
Apple Cinnamon Muffins	2.7	94.6%
Chocolate Chip Bean Muffins	2.6	96%
3 Bean Chili	2.5	75.6%
Hummus	2.5	72.7%
Black Bean Fruit Salsa	2.3	61.9%
Seasoned Green Bean Fries	2.2	46.2%
Black Bean Sandwich Spread	2.0	50%

Evaluation Results

- Parents/caregivers significantly increased their knowledge of beans as a source of fiber and folate.
- Parents/caregivers increased their knowledge of beans as a source of natural antioxidants.
- The use of canned beans significantly increased among families, specifically the use of black beans and Great Northern beans.



Evaluation Results



- 88% of parents reported reading the parent newsletter.
- 69% reported that their child talked about beans.
- 83% reported that their child talked about gardening and art activities.
- 85% reported that their child talked about taste-testing bean recipes.

Follow-up

- Results presented at a national meeting.
- Journal article is being written.
- Materials have been “packaged” into a curriculum.





“Spilling the Beans” received the 1st Place Central Region Nutrition Education Award at the National Extension Association of Family and Consumer Sciences.

KIDS IN THE GARDEN

**NDSU Extension Service Preschool
Gardening Project 2012**



Kids


Project Overview

- **Eight garden-based lessons**
- **Parent newsletters**
- **Visual recipes**
- **Evaluation**



Garden-themed Lessons Based on Children's Books

- Gardens
- Critters in the Garden
- Seeds in the Garden
- Roots in the Garden
- Stems in the Garden
- Leaves in the Garden
- Flowers in the Garden
- Fruit in the Garden



Fruit in the Garden Lesson Plan

Preparation and Supplies

What Could It Be?
 • Mystery container
 • Strawberries

Story Time
 • "Fruit"
 By Vijaya Khisty Bodach
 ISBN 978-1-4296-4764-5

Talking Points
 • Example pictures of kinds of fruit, such as apples, peaches and strawberries
 • Optional: Large sheet of paper to record children's ideas

MyPlate
 • MyPlate poster

Make It
 • Sunrise Smoothie recipe
 • Blender
 • Smoothie ingredients
 • Cups

Send Home
 • Extension card (if needed)
 • Parent newsletter "Fruits in the Garden"


Target Audience
3- to 5-year-olds

Time Needed
45 to 60 minutes

Objectives

- Participants will be able to name at least three kinds of fruit.
- Participants will be able to describe the function of the fruit on a plant.
- Participants will be able to name the five food groups of MyPlate.
- Participants will be able to classify various foods such as apples, strawberries and oranges as part of the MyPlate Fruit group.

Stacy Wang, R.D., Extension Associate
 Julie Garden-Robinson, Ph.D., R.D., L.R.D., Food and Nutrition Specialist
 NDSU EXTENSION SERVICE
 July 2012



Roots in the Garden Lesson Plan

Preparation and Supplies

What Could It Be?
 • Mystery container
 • Carrots (whole or baby)

Story Time
 • "Roots"
 By Vijaya Khisty Bodach
 ISBN 978-1-4296-4764-5

Talking Points
 • Example pictures of different root vegetables and other plant roots
 • Optional: Large sheet of paper to record children's ideas

MyPlate
 • MyPlate poster

Explore
 • Small clear cups or other container
 • Grass seed
 • Potting soil
 • Spray bottle
 • Water

Send Home
 • Parent newsletter "Roots in the Garden"

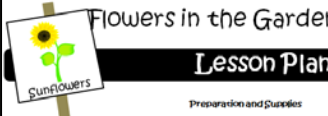
Target Audience
3- to 5-year-olds

Time Needed
45 to 60 minutes

Objectives

- Participants will be able to name three root vegetables.
- Participants will be able to describe what function a root plays as part of a plant.
- Participants will be able to name the five food groups of MyPlate.
- Participants will be able to classify where root vegetables fit into MyPlate.

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Flowers in the Garden Lesson Plan

Preparation and Supplies

What Could It Be?
 • Mystery container
 • Sunflower seeds

Story Time
 • "Flowers"
 By Vijaya Khisty Bodach
 ISBN 978-1-4296-4763-8

Talking Points
 • Example pictures of kinds of flowers in the garden, such as sunflowers, artichokes and cauliflower.
- Optional: Large sheet of paper to record children's ideas
- Optional: marker

MyPlate
 • MyPlate poster

Create It
 • Willow construction paper
 • Black construction paper
 • Green construction paper
 • Markers
 • Scissors
 • Glue/Tapler

Send Home
 • Parent newsletter "Flowers in the Garden"

Target Audience
3- to 5-year-olds

Time Needed
45 to 60 minutes

Objectives

- Participants will be able to name three flowers in the garden.
- Participants will know the function of the flower of a plant.
- Participants will be able to name the five food groups of MyPlate.
- Participants will be able to classify flowers such as artichokes and cauliflower into the MyPlate Vegetable group.

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Lesson Format

- **Mystery box introduction**
- **Story**
- **Discussion**
- **Activity**
- **Take-home newsletter**



Visual Recipes

- Kiddie Salsa
- Broccoli Pinwheels

* All contained beans



Kiddie Salsa



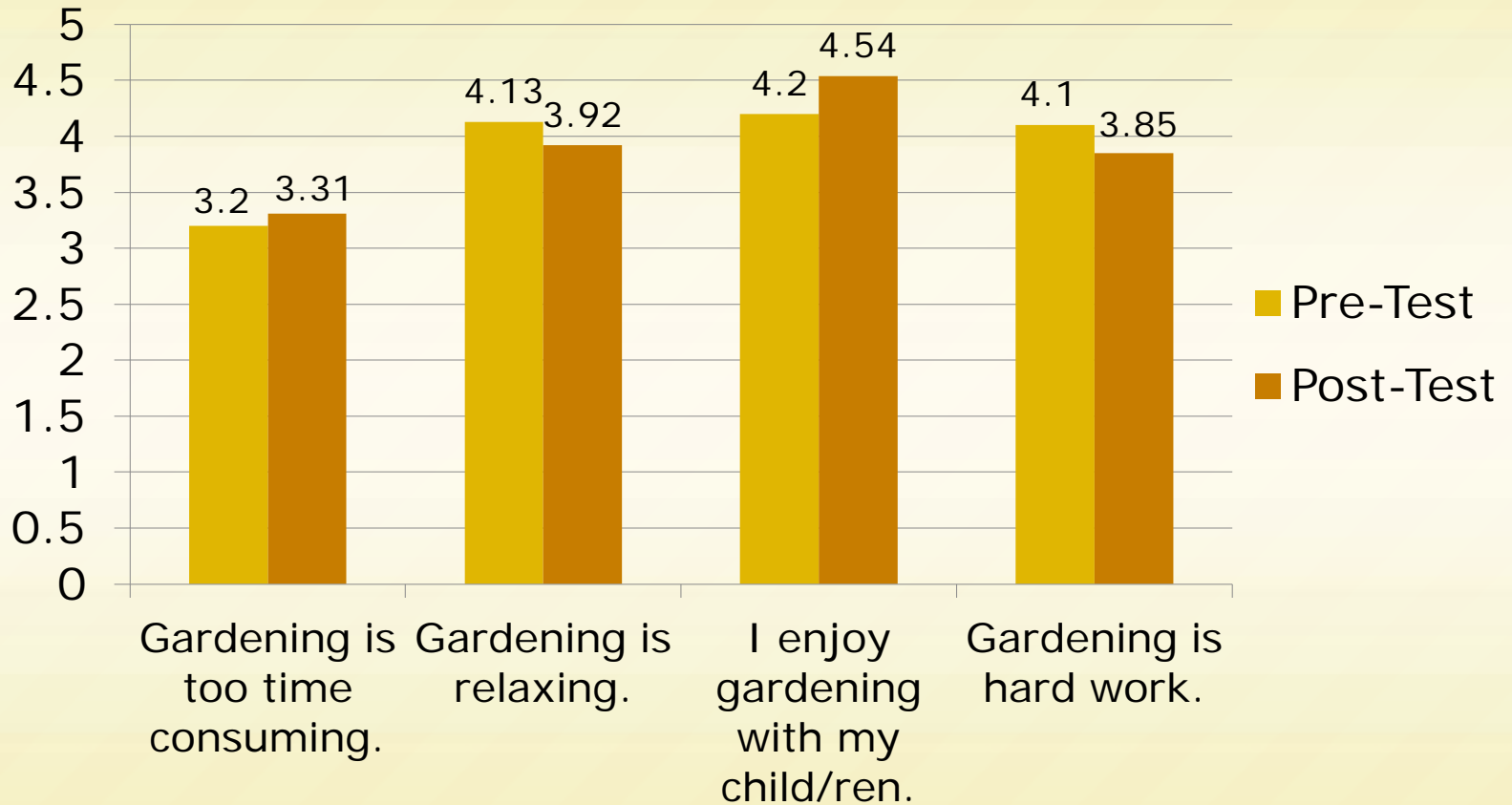


Parent Outreach Results

- About 69% of the families read the newsletters.
- About 30% of parents indicated their child likes green beans and 39% indicated their child likes dry edible beans.
- The majority of parents indicated that beans are affordable (85%) and healthy (77%), but 23% indicated that beans take too long to prepare.

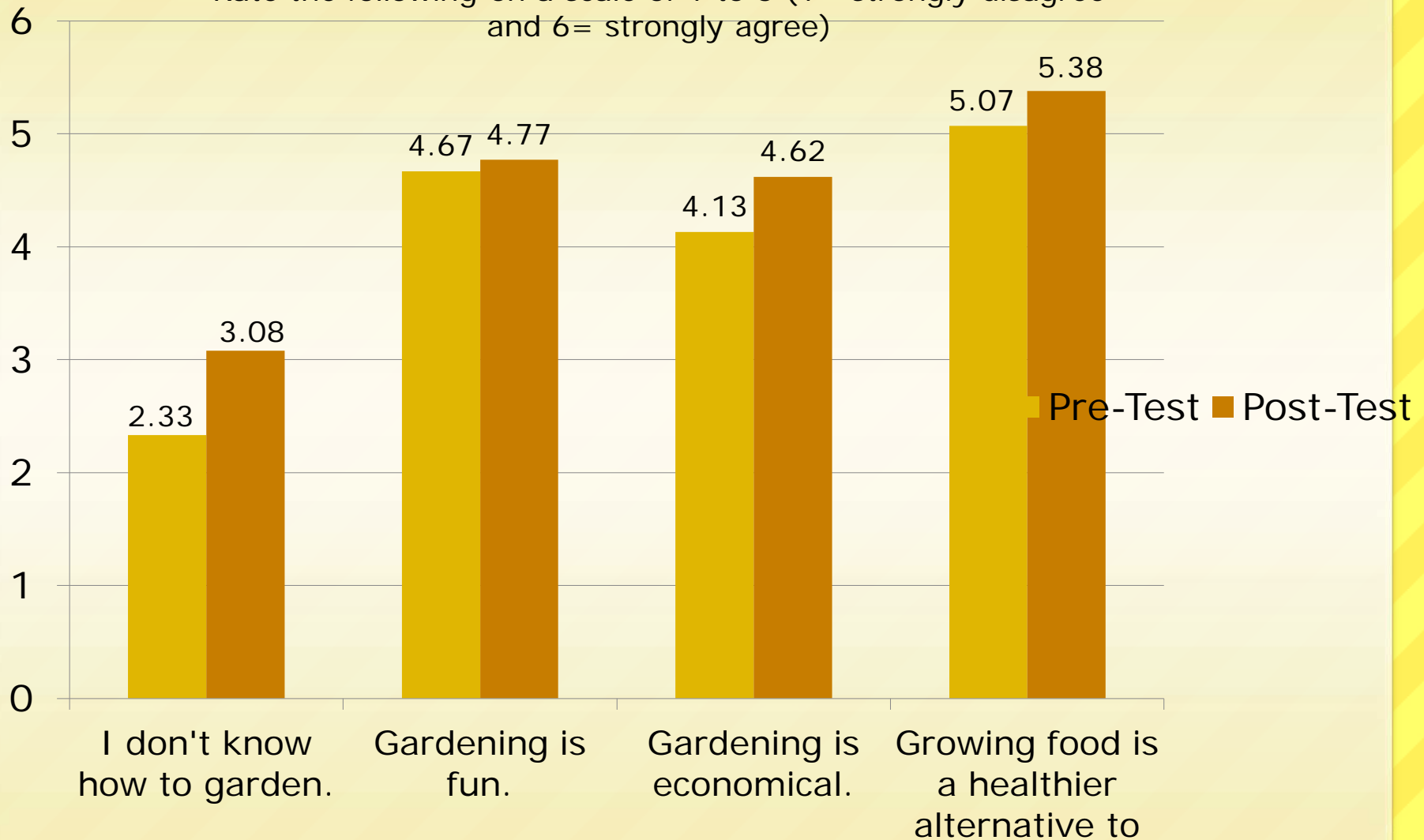
Rate the following on a scale of 1 to 6 (1= strongly disagree and 6= strongly agree)

Gardening Knowledge/Behavior



Gardening Knowledge/Behavior

Rate the following on a scale of 1 to 6 (1= strongly disagree and 6= strongly agree)



**Curriculum now
“packaged” and is being
disseminated for use**

**Abstract is being prepared
for presentation at a
national meeting.**

National Survey of Extension/Health Professionals About Beans - Update



Review/Update – National Online Survey

- After IRB approval, an individual invitation was sent to state food/nutrition specialists to forward to Extension staff/others; participants also recruited at National Meeting
- **732** Extension agents, specialists, dietitians or public health educators from **43 states** participated and were linked to the BeanCAP Extension resources upon completion of the survey.
- At completion, linked to BeanCAP Extension website resource page

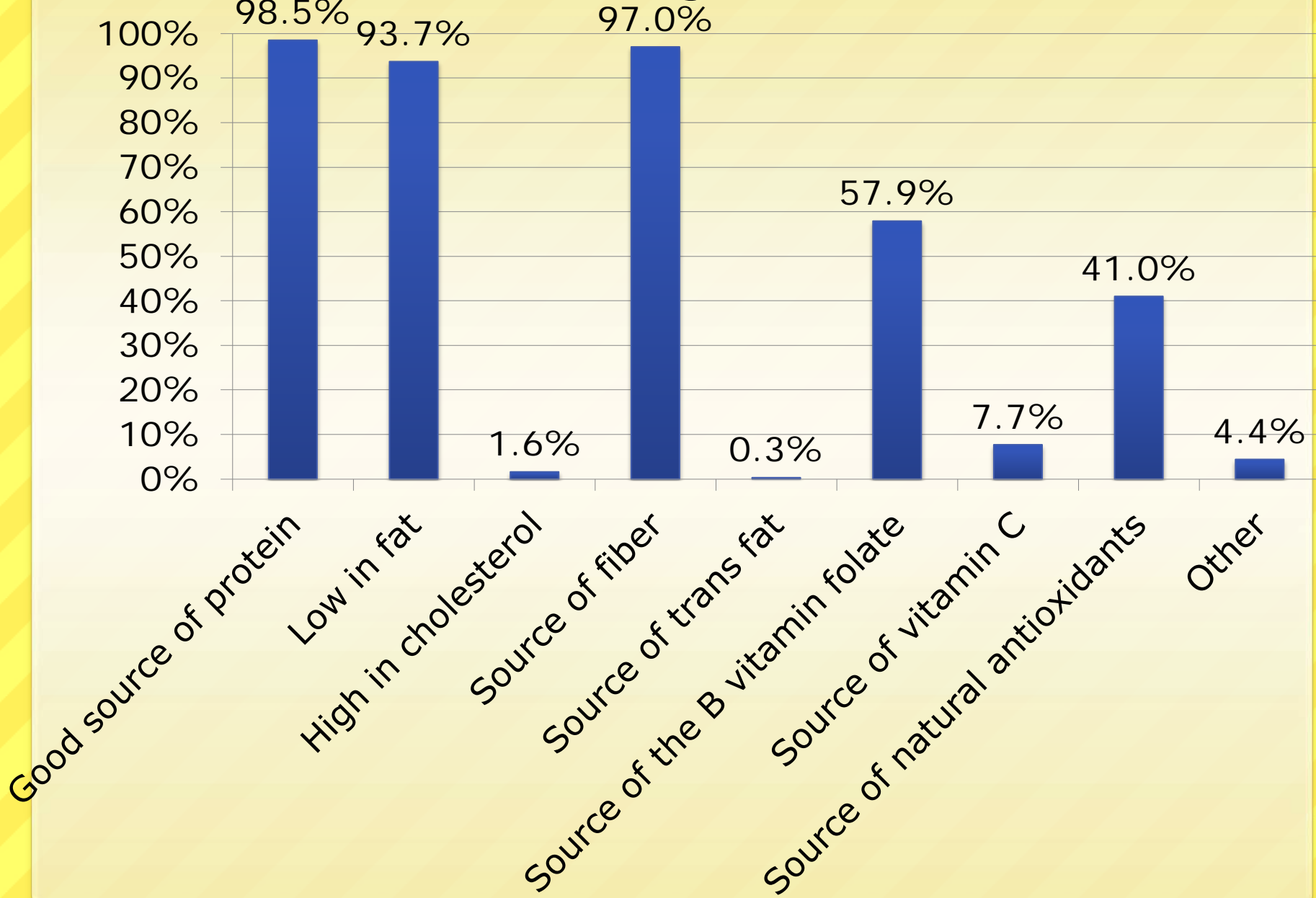


	Educators' Mean Response	Educators' Perceptions of Clients
Beans taste good.	5.34	4.24
Beans have an unappealing texture.	2.34	3.75
Beans are affordable.	5.67	5.27
Beans cause intestinal discomfort.	3.46	4.82
Children like beans.	4.16	3.33
The aroma of beans is appealing.	4.40	3.67
Beans are a healthy food.	5.77	4.92


Scale 1-6

1=strongly disagree; 2= Disagree; 3=somewhat disagree; 4=somewhat agree; 5= agree; 6= strongly agree

Which of the following describe(s) beans?



What resources would be especially helpful in promoting bean health benefits?

<p>Most Popular</p>  <p>Least Popular</p>	Brochure with recipes	76.0%
	How to prepare dry beans showing step-by-step photos with recipes	67.7%
	Lesson plans for use with adults	66.5%
	Tips on how to reduce intestinal discomfort (including gas) after eating beans	62.6%
	Lesson plans for use in schools with children	53.9%
	Online video on dry bean preparation (how to soak, etc.)	51.2%
	Brochure with health benefits of bean consumption	49.7%
	Online videos showing various recipes	43.2%
	Spreadsheet with different bean varieties and information on how to prepare	35.4%
	Newsletter about beans	33.4%
	Facebook page with updates	15.4%
	Blog with bean benefits	6.6%

2013 Update

- Survey results presented at the Society for Nutrition Education and Behavior in Washington, D.C.
- Journal article about survey results being prepared
- Bean presentation made at the conference of Northwest Minnesota Academy of Nutrition and Dietetics

New and Updated Materials

- “Now Serving: Beans” Bingo game and presentation updated to MyPlate
 - Added another evaluation tool
 - Broad use in other states; one state sent evaluations
- “Mixes in a Jar” including bean soup recipe used widely throughout U.S. in cooperation with Nebraska Extension Service

“Now Serving” Teaching tool ratings:

4.7 on a 5-point (5 = Excellent) scale.

Educators' rating of participants using the interactive tool:

Knowledge before: 1.9

Knowledge after: 4.2

Multimedia

- Bean cookbook featuring dry edible beans and green beans nearing completion
- Bean publication for professionals (research summaries) in production
- 7 nutrition interns created bean recipe video demonstrations on YouTube:
 - * Country Chili Mix: 669 views
 - * Mediterranean Bean Salad: 668 views
 - * Arriba Nacho dip: 531 views
- Expanded visual recipes collection
- All on beancap.org and www.ndsu.edu/eatsmart



Multi Layer Bean Dip



Ingredients:

- 1 (16 ounce) can refried beans
- 1 (1 ounce) package taco seasoning mix
- 1 (8 ounce) package cream cheese, softened
- 1 (4.5 ounce) can chopped green chilies
- 1 cup Thick 'n Chunky salsa (any variety)
- 2 cups shredded lettuce
- 2 cups shredded Cheddar or Mexican cheese blend (8 ounces)
- 1 medium tomato, finely diced (3/4 cup)
- 1 (2.25 ounce) can sliced ripe olives, drained (1/2 cup)



DIRECTIONS



1. Combine beans and taco



2. Stir until mixed.



3. Evenly spread mixture in pan.



4. Combine cream cheese and chilies.



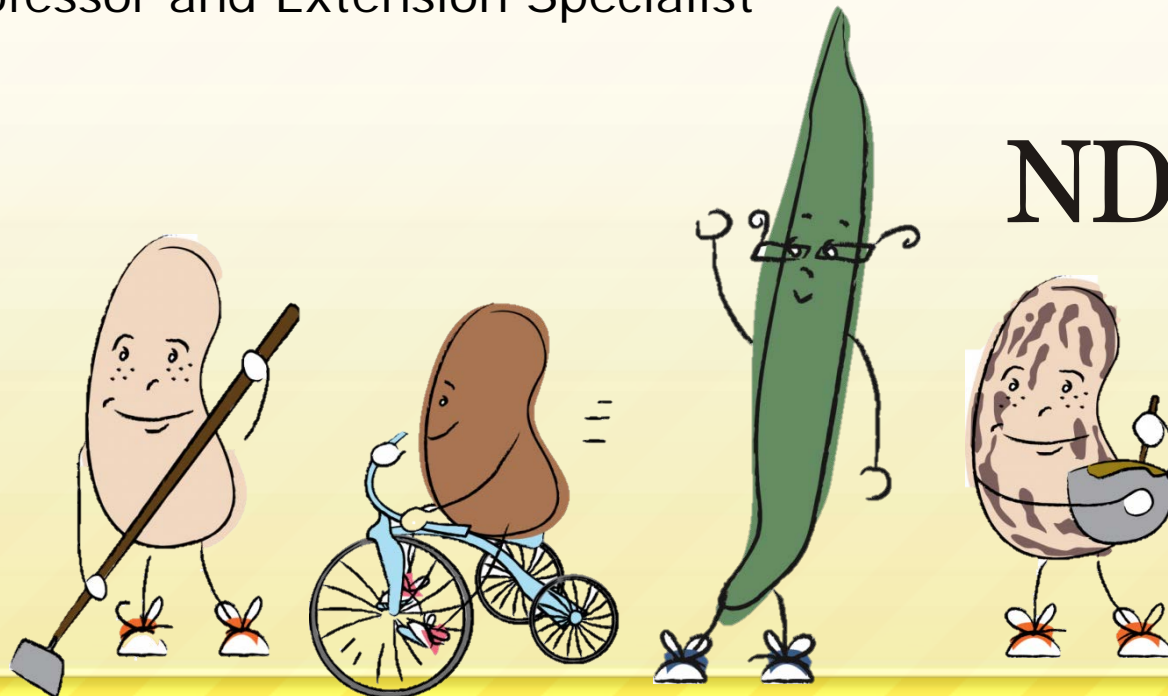
5. Stir until mixed.



6. Evenly spread over bean mixture.

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