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# Where Health & Horticulture Intersect: A Navajo Wellness Collaboration



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CURES START HERE™



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# Thank You!

- Communities of Shiprock and Crownpoint
- Office of Youth Development and Dream Diné
- NNHRRB



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# Project Overview

- 3 year pilot project
- Two community-based gardens
  - Dream Dine Charter School, Shiprock, NM
  - Office of Dine Youth, Crownpoint, NM
- Survey
  - 4 assessment time points
- 2 summer gardening workshop series
- Main research question: Would a community garden in your community influence you to change how you eat or how you feel about gardening?



# Long term goal and context

Enhance the consumption of fresh produce among the Navajo (Diné) people and their neighbors, in order to reduce the rate of diabetes and reduce cancer risk in the context of local food production.

- The U.S. Department of Agriculture has labeled the **entire** Navajo Nation a "food desert," because of the lack of healthy foods.
- The Navajo Nation is the largest reservation in the United States, roughly the size of West Virginia - it only has **10 grocery stores**.
- **1 of 3** Navajo people suffers from **diabetes** (Indian Health Service)



# Attitudes about Gardening

- Health benefits of gardening
- Nutrition
- Economic benefits of gardening
- Gardening was important in the past.
  - Some younger generations didn't seem to view it as a top priority. Why farm?
  - Others were very interested in reconnecting

*“I think with the extra movement, hoeing, weeding, it would be good exercise although it would be healthier to eat more fruit and vegetables if it's ongoing”*



Ramah Chapter (Pine Hill, NM)

- Develop a multi-component intervention that integrates community gardens, educational workshops and community outreach components in Navajo communities;
- Estimate the effects of an integrated intervention on adoption and frequency of gardening practices, vegetable and fruit intake amongst participating communities
- Estimate the effects of an integrated intervention on self-monitoring, self-efficacy, behavioral capability, and social norms related to gardening and vegetable and fruit consumption

## Specific Aims



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*Filling grow boxes at Shiprock site  
March 2015*

# Project Progress and Timeline

YEAR 2014					YEAR 2015				YEAR 2016		
	WINTER	SPRING	SUMMER	FALL Sept - Nov	WINTER Dec-Feb	SPRING Mar-May	SUMMER Jun - Aug	FALL Sept-Nov	WINTER	SPRING	SUMMER
Shiprock A			T <sub>0</sub>		T <sub>1</sub>			T <sub>2</sub>			
Shiprock B					T <sub>0</sub>	Dream Dine		T <sub>1</sub>	T <sub>2</sub>		
Crownpoint A			T <sub>0</sub>		T <sub>1</sub>			T <sub>2</sub>			
Crownpoint B									T <sub>3</sub>		



Garden



Infrastructure enhancement  
(irrigation/hoop house)



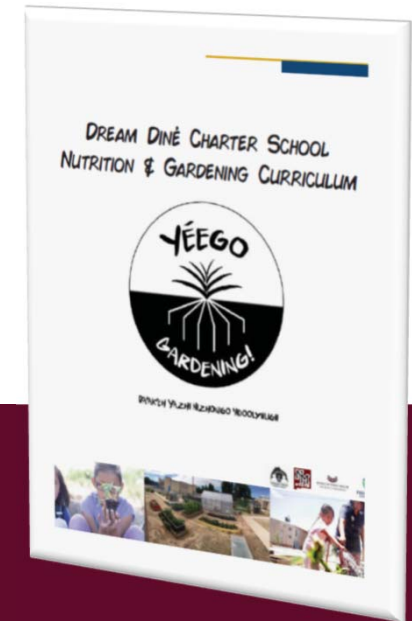
Workshops version 1



Workshops version 2



Survey Timepoint





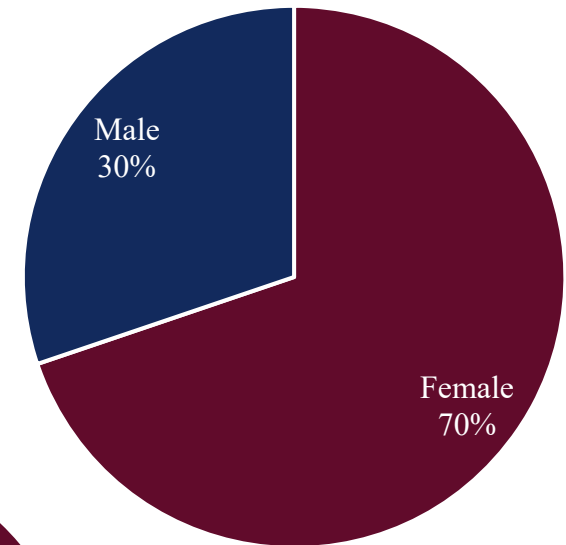
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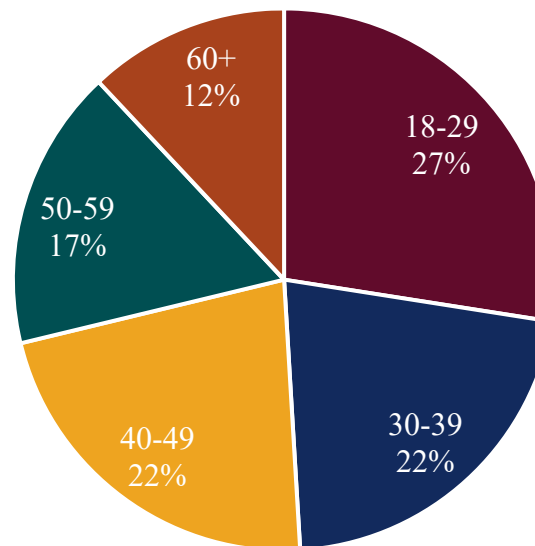


# Gender, Age, and Marital Status

Gender



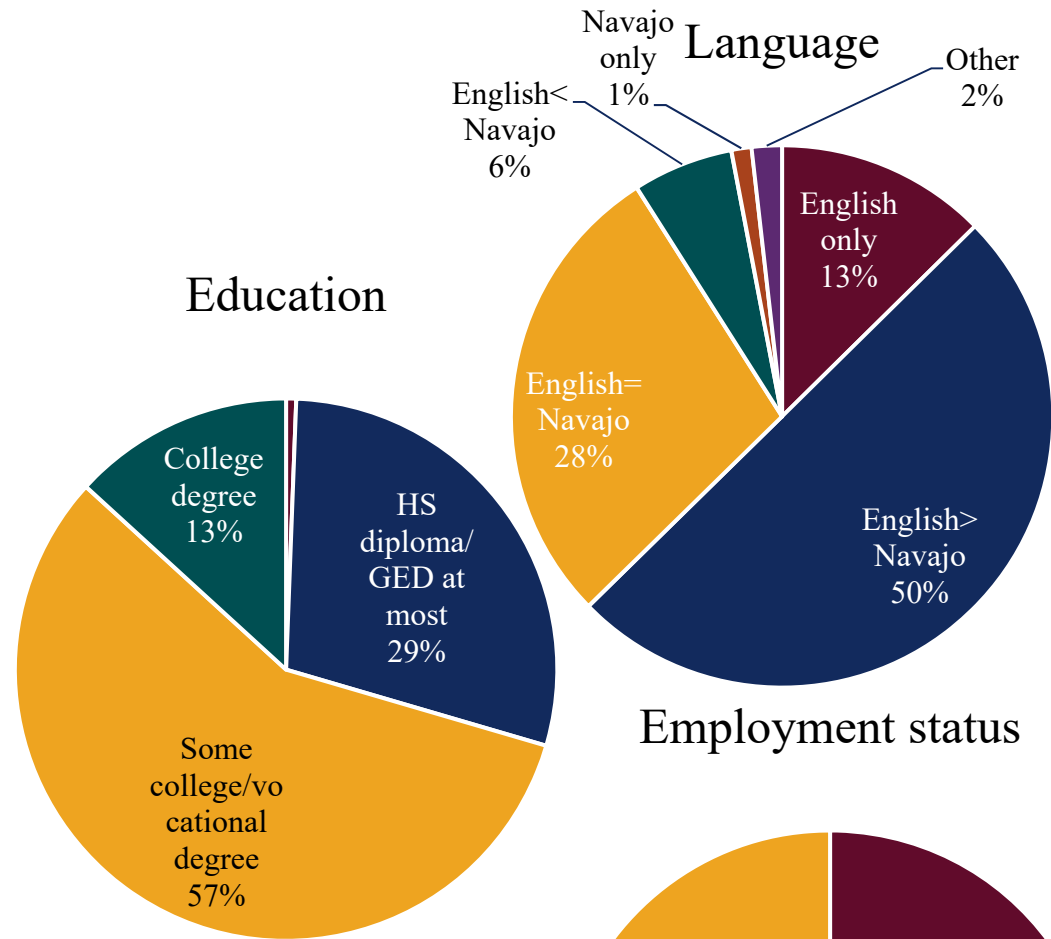
Age



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# Language, Education, and Employment



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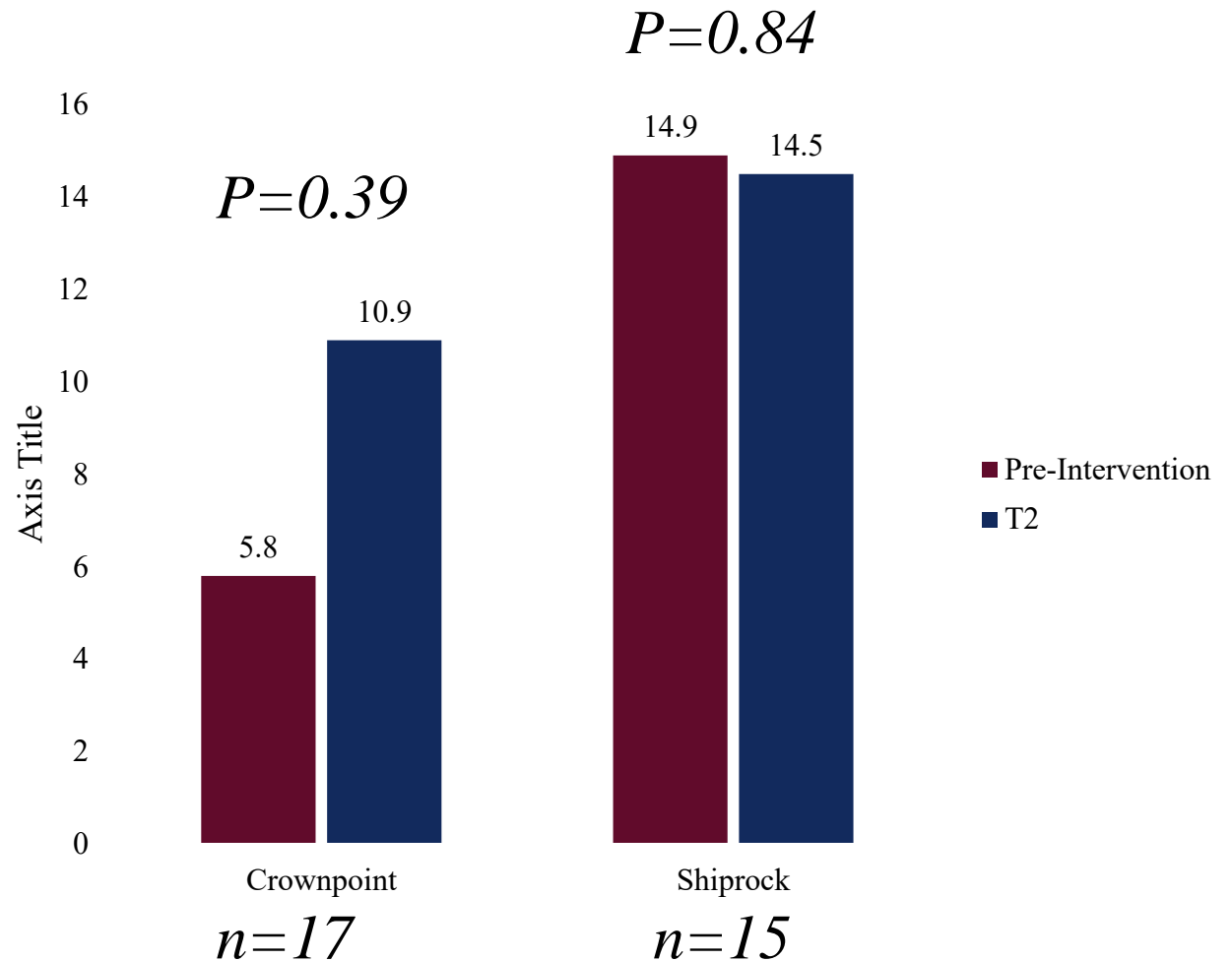
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# Preliminary Results

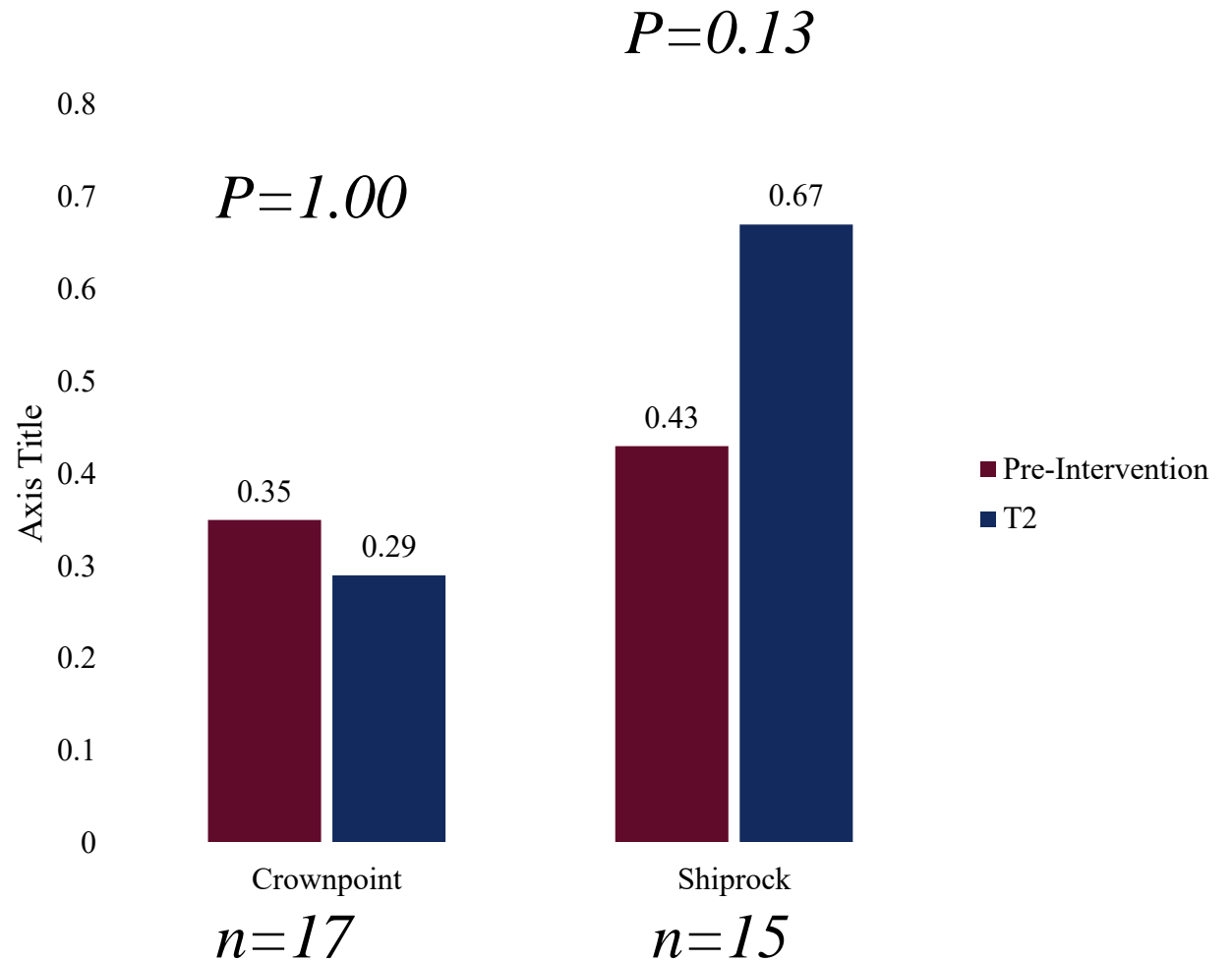
- Pre-post analysis showed the intervention increased the frequency of gardening activities. There were no changes in vegetable and fruit consumption.
- Explicit focus on healthy eating is needed.
  - 58% report 2 or fewer fruits and vegetables daily

# Gardening Frequency

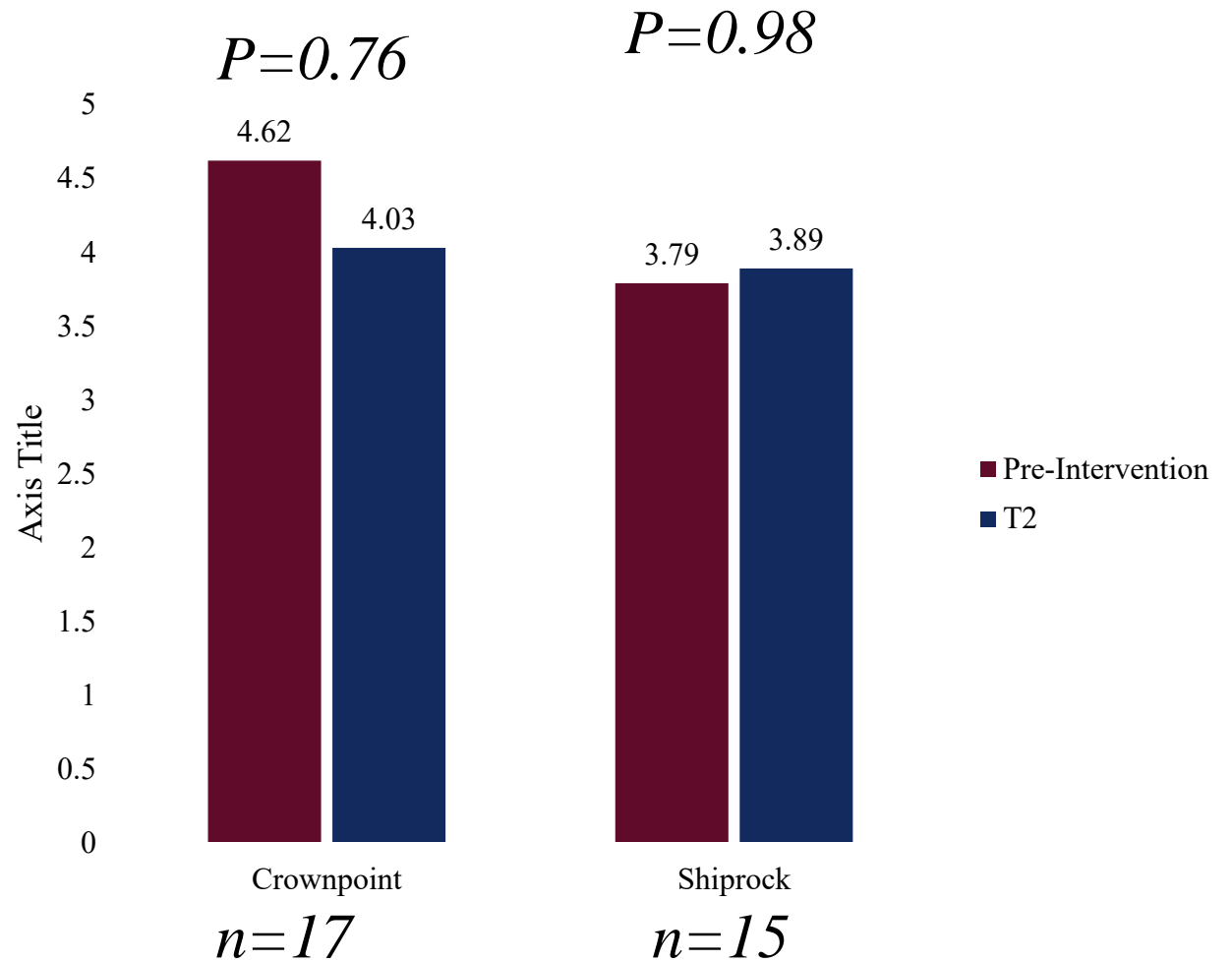
- Frequency of gardening increased most in Crownpoint
- Is this because Crownpoint is not located in a farming area ?



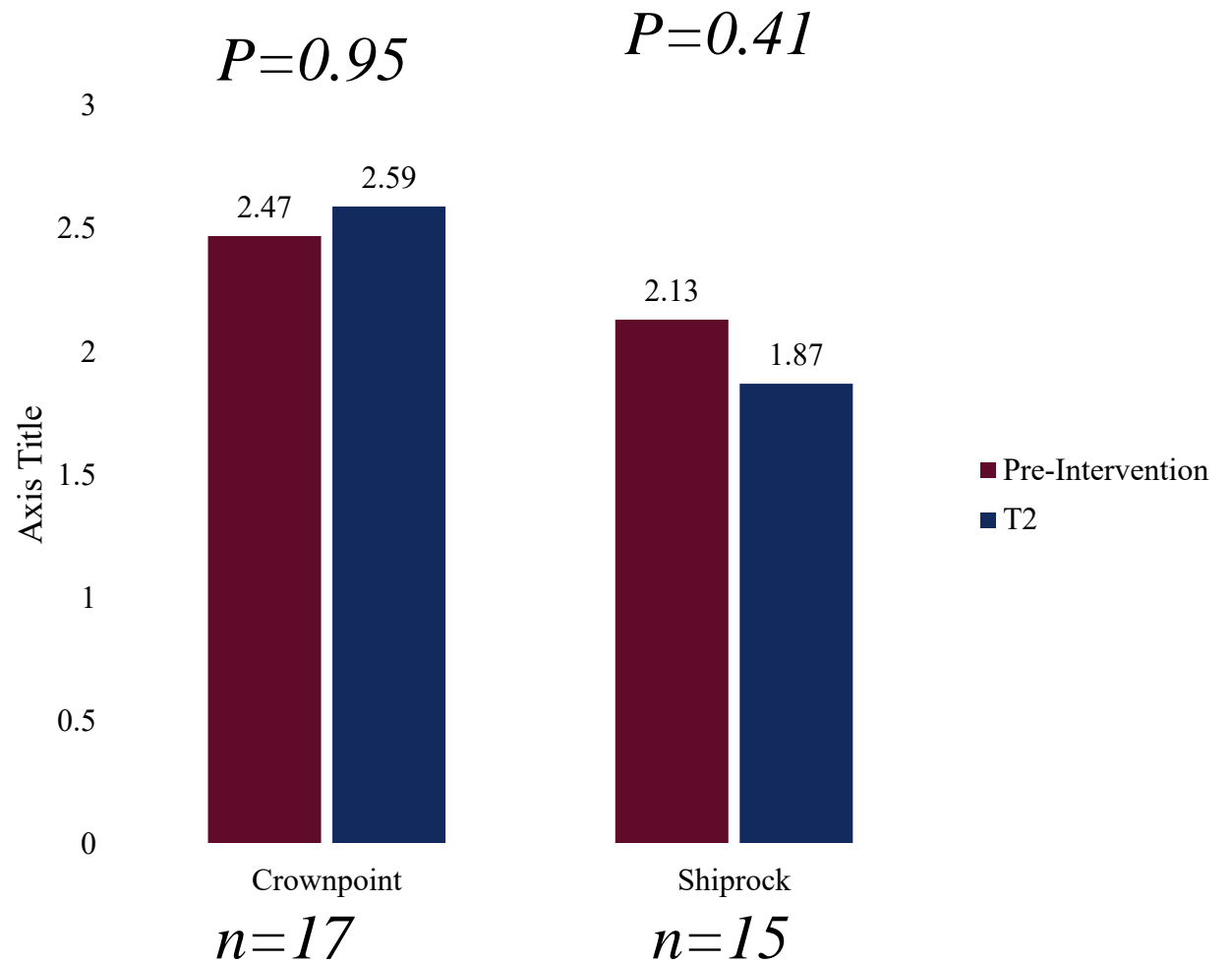
# Gardened in the last year



# Abbreviated FFQ

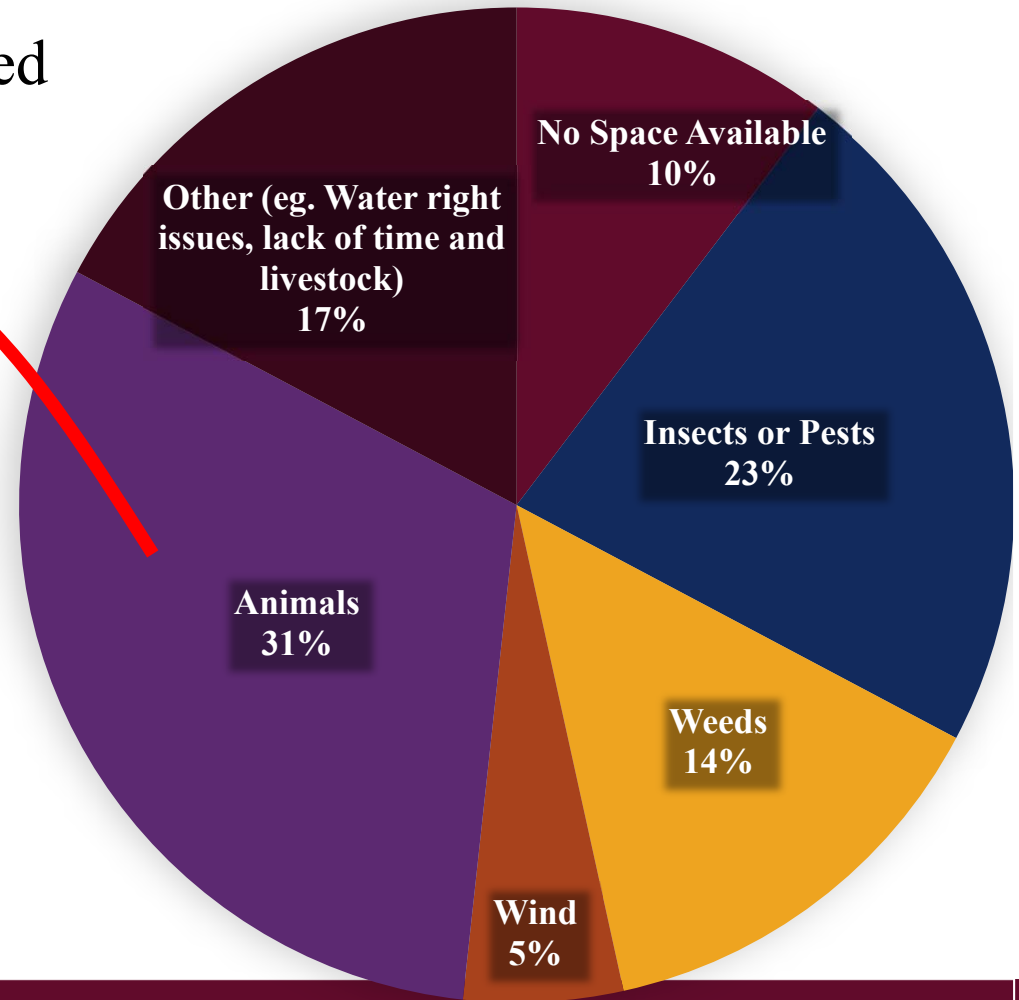


# Single item FFQ



# Barriers to Gardening: Shiprock

Prairie dog predation decimated Shiprock garden in 2014

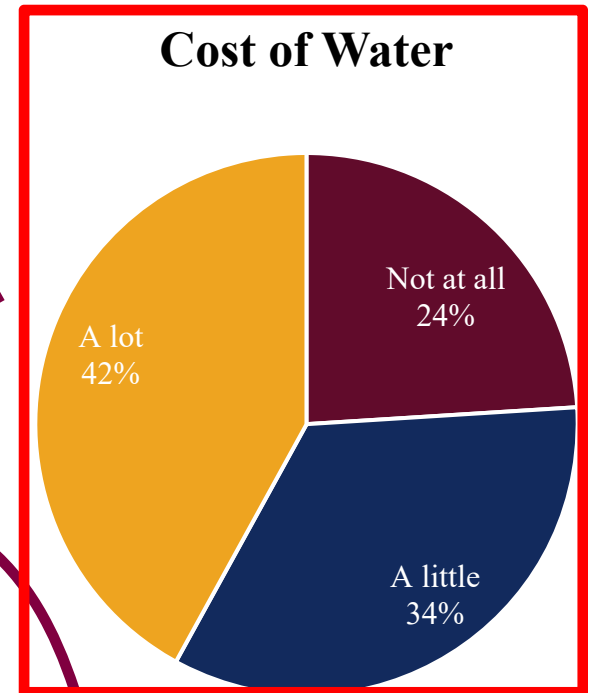




# Financial barriers to gardening: Crownpoint and Shiprock

## Emphasize water conservation:

- Native plants
- Water conserving technologies



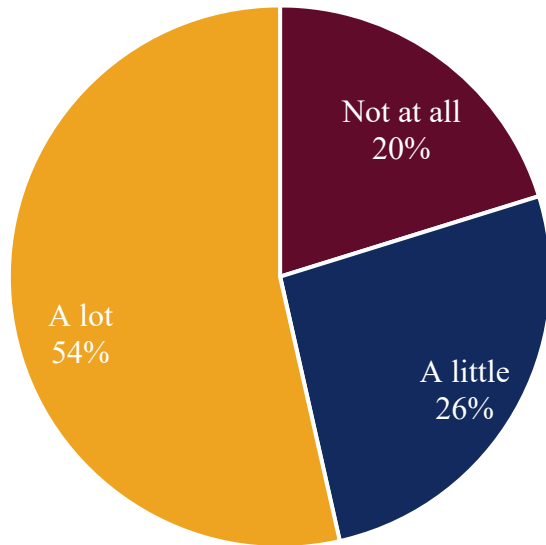
## NTUA Water Usage Charge

- First 3,000 gallons: \$3.91 per 1,000 gallons
- All Additional gallons: \$ 6.05 per 1,000 gallons
- According to the NTUA water consumption fee, the cost of watering a 2,000 sq. ft. garden that received 816.5 gal over 21 days equaled **\$3.19**

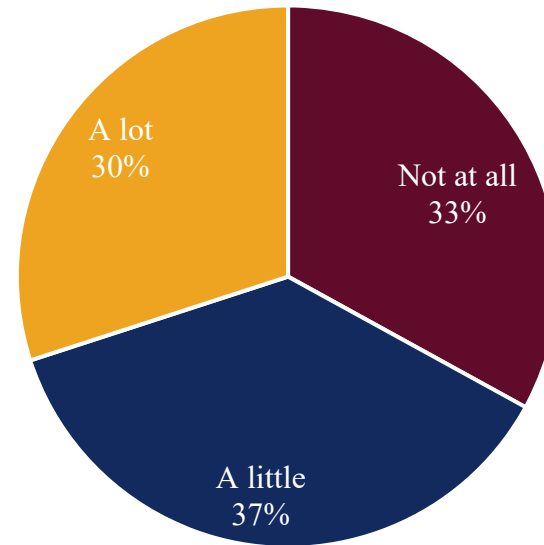


# Financial barriers to gardening: Crownpoint and Shiprock

Cost of fencing



Cost of tools



# Summary

- Implemented and evaluated community garden intervention in 2 Navajo communities.
  - Recruited 186 participants from 161 households, who completed at least one survey
  - 300 participants attended at least one of 17 workshops
  - Constructed 10 garden beds and 1 greenhouse
- Conducted qualitative ancillary study to further assess barriers to gardening and healthy eating (N = 16)
- Students at San Juan College, Dine College and Fort Lewis College interested in regional health disparities



- **Limitations:** Our intervention was not intensive enough
- **Present Work:** In conjunction with focus groups, we are engaging adults through the family
- **Future Directions:** Attempt to estimate gardening intervention effect (note there are many programs around gardening – few with formal evaluation).
- Responsive to area of interest among Navajo (Gardening is becoming more prominent on the Navajo Nation)





# Food is Medicine: Examples of Warm Season Crops: Fruit are consumed



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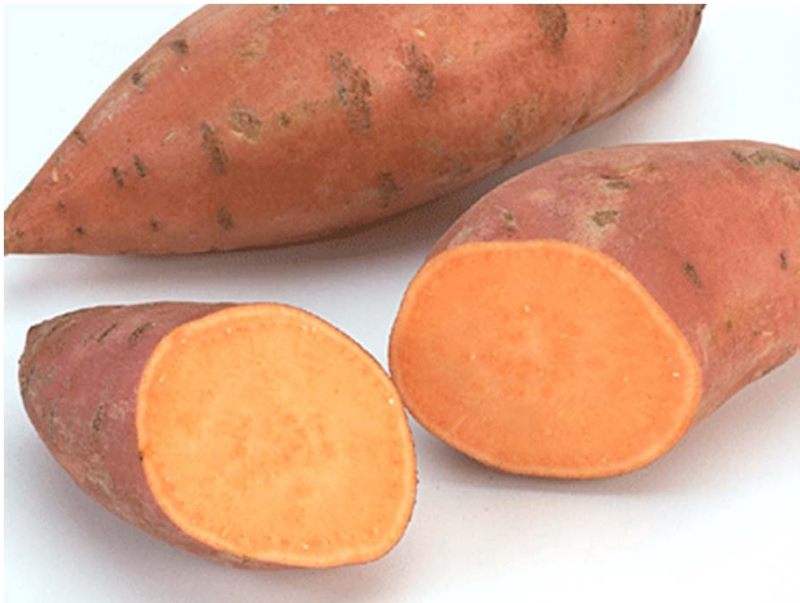
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# Examples of Warm Season Crops: Fruit are consumed





# Examples of Warm Season Crops: Generally Fruit are Eaten



Sweet P



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# Examples of Cool Season Crops: Generally Roots and Leaves Eaten



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# Examples of Cool Season Crops: Generally Roots and Leaves Eaten





# Examples of Cool Season Crops: Generally Roots and Leaves Eaten



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# Examples of Cool Season Crops: Roots and Leaves Eaten



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# Examples of Cool Season Crops: Roots and Leaves Eaten





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# QUESTIONS?

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