

A Comparison of the Nutrient Content of Hawaiian Fruits and Vegetables with USDA Standard Reference Data

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Overview

- Cancer Research Center of Hawai`i
- Sampling Procedure
- Results
- Conclusion

Cancer Research Center of Hawai`i

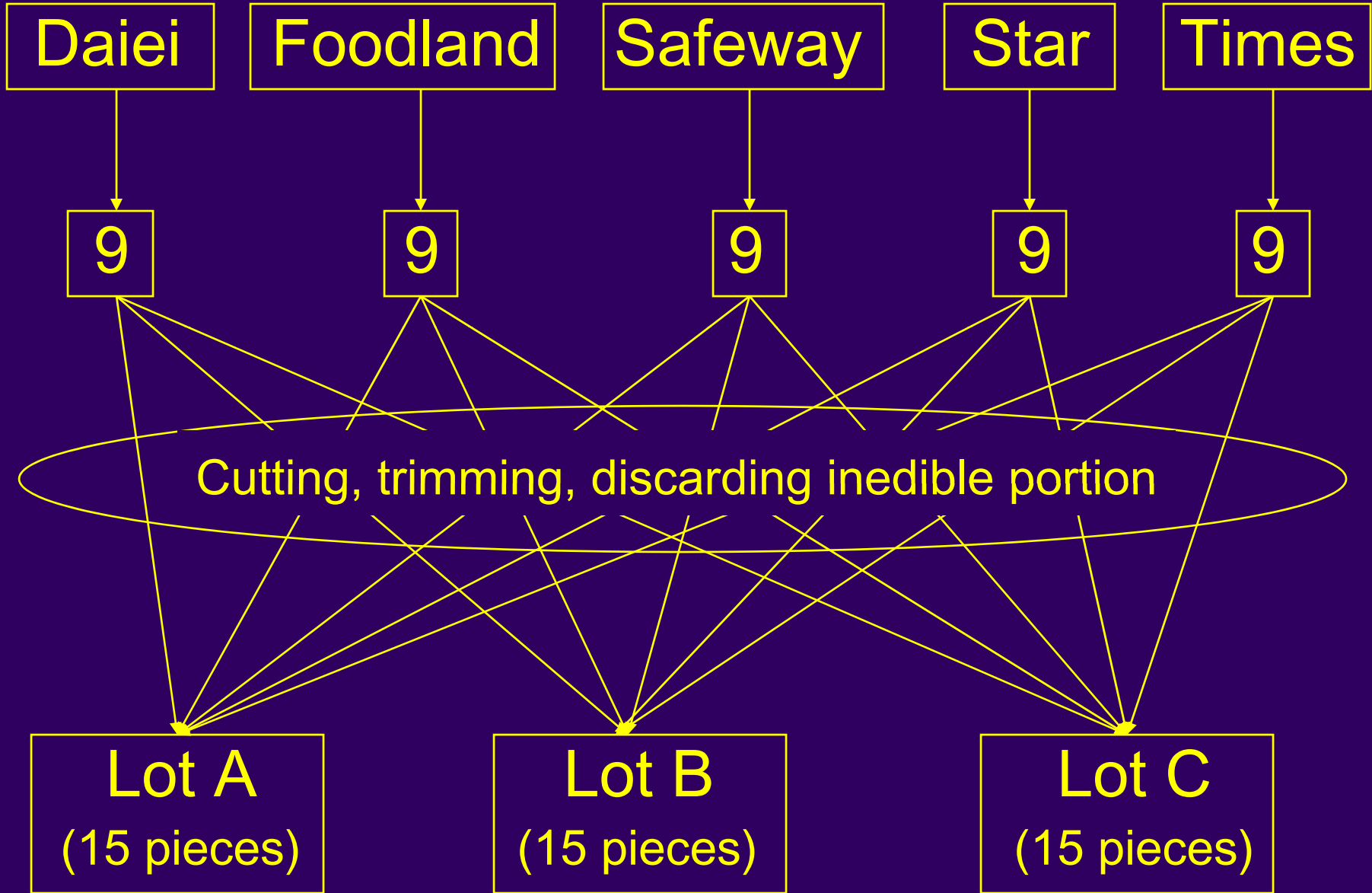
- Research unit within the University of Hawai`i
- Focus on diet and cancer
 - Unique multiethnic population
 - Distinct food habits
 - Local/regional food varieties of foods
 - Variation in cancer incidence across ethnicities

Cancer Research Center of Hawai`i

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Sampling Protocol

- Focus: locally grown and marketed produce
- Five major supermarkets on O`ahu
 - All supplied by one distributor
 - Similar transportation and storage facilities
 - O`ahu is small (<600 square miles)
 - One store from each chain was sampled and assumed representative of the entire chain



Lot A
(15 pieces)

Lot B
(15 pieces)

Lot C
(15 pieces)

Blend

**Freeze Drying
with Nitrogen Flush**

Moisture
Vitamin C

Vitamin E
Proximate
Minerals

Results: Avocado

Hass Avocado



Whole: 201 g

Local Avocado



Whole: 440 g

Results: Avocado

	Local Avocado	Avocado, all commercial varieties*
Protein (g)	1.336	2.00
Total Fat (g)	15.1	14.66
Iron (mg)	0.93	0.55
Phosphorous (mg)	38	52
Potassium (mg)	434	485
Zinc (mg)	0.33	0.64
Alpha Tocopherol (mg)	0.52	2.07

*NDB No: 09038 (USDA SR 22)

Results: Banana

Banana

1 extra small (less than 6"): 81 g

1 small (6"-6-7/8"): 101 g

1 medium (7"-7-7/8"): 118 g



Apple Banana: 75 g

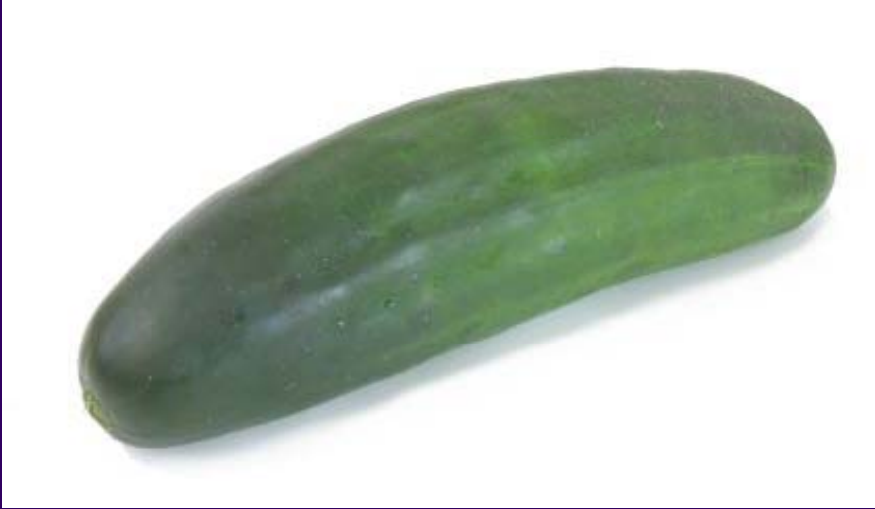
average length: 4-5" long (EP)

Results: Banana

	Apple Banana	Bananas*
Protein (g)	1.05	1.09
Total Fat (g)	0.45	0.33
Iron (mg)	0.84	0.26
Magnesium (mg)	39	27
Potassium (mg)	344	358
Sodium (mg)	8	1

*NDB No: 09040 (USDA SR 22)

Results: Cucumber



1 Cucumber
(8-1/4" length; 7" girth)
= 301 g



1 Cucumber
(10" length; 4.5" girth)
= 200 g

Results: Cucumber

	Japanese Cucumber	Cucumber, with peel*
Protein (g)	1.158	0.65
Total Fat (g)	0.09	0.11
Magnesium (mg)	7	13
Phosphorous (mg)	16	24
Potassium (mg)	118	147
Sodium (mg)	2	2

*NDB No: 11205 (USDA SR 22)

Results: Eggplant



1 eggplant, unpeeled
= 156 g



1 eggplant, unpeeled
= 548 g

Results: Eggplant

	Japanese Eggplant	Eggplant, raw*
Protein (g)	1.05	1.01
Total Fat (g)	0.22	0.19
Iron (mg)	0.41	0.24
Phosphorous (mg)	29	25
Potassium (mg)	216	230
Copper (mg)	0.14	0.08

*NDB No: 11209 (USDA SR 22)

Results: Lettuce



Butter Lettuce
1 head (5" dia) = 163 g



Manoa Lettuce
1 head (5" dia) = 115 g

Results: Lettuce

	Manoa Lettuce	Lettuce, butterhead
Protein (g)	1.10	1.35
Total Fat (g)	0.03	0.22
Iron (mg)	0.77	1.24
Phosphorous (mg)	27	33
Potassium (mg)	271	238
Sodium (mg)	17	5

*NDB No: 11250 (USDA SR 22)

Results: Onion



Maui Onion



Sweet Onion



Yellow Onion

Results: Onion

	Maui Onion	Onion, sweet*	Onion, raw**
Protein (g)	0.65	0.80	1.10
Calcium (mg)	13	20	23
Magnesium (mg)	7	9	10
Phosphorous (mg)	22	27	29
Potassium (mg)	101	119	146
Zinc (mg)	0.08	0.13	0.17

*NDB No: 11294 (USDA SR 22)

**NDB No: 11282 (USDA SR 22)

Conclusion

- Regional foods can make a difference in nutrient intake
- Clinical application: people on dialysis
- Obtaining sufficient detail from participants variety may not be easy

Future Projects

- Scientific names not identified
- Varieties within local sources
- Commercial vs. home-grown varieties
- Seasonality

Acknowledgements

Thank you to Stuart Kim for the collection and preparation of the food samples.

