One **Pitaya** Has...

- -48% Dietary Fiber
- -Antioxidants
- -8% Vitamin C
- -12% Iron
- -4g Protein
- -4% Calcium
- -36% Magnesium

*Daily Values are based on an average Pitaya weighing 400 grams

www.pitayaplus.com

ACCEPTABILITY CHARACTERISTICS OF DRAGON FRUIT CUPCAKE

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OBJECTIVES

GENERAL: The research aimed to develop a standard procedure and formulation in the preparation of dragon fruit cupcake using the rejects

SPECIFICALLY:

1. Level of acceptability of the dragon fruit as a substitute of carrots in cupcakes in terms of

    a. Appearance

    b. Color

    c. Aroma

    D. Texture

    E. Taste

2. Significant difference between the faculty and students' evaluation;

3. Standard procedure in preparing dragon fruit cupcake;

4. Nutritional content

5. Microbial load

6. Shelf life

7. Marketability of the product in terms of;

    A. Willingness to buy the products,

    B. Which among the treatments do they prefer to buy?

    C. Preferred price of the chosen formulation; and

8. Highest ROI.

METHODS:

RESEARCH DESIGN

- Laboratory method of experimentation.
- It is instruction/classroom based and it involved the participation of the BSHM students enrolled in baking

METHODS:

- **TREATMENTS**

CCC0 - 100 % CARROTS (CARROT CUPCAKE)

DFCC1 - 75% CARROTS + 25% DRAGON FRUIT

DFCC2 – 50% CARROTS + 50% DRAGON FRUIT

DFCC3 – 25% CARROTS + 75% DRAGON FRUIT

DFCC4 – 100% DRAGON FRUIT

- **Preparation of Cupcakes**
- **Sensory Evaluation**

- using a 7-point Likert scale

- **Population and Sampling**

- 7 faculty members
- 86 third year BSHM students
- Purposive sampling

- **Data Gathering and Instrumentation**

- 7-likert scale from Vagias, Wade M. (2006)

7-likert scale

NUMERICAL RATING	STATISTICAL LIMITS		DESCRIPTIVE RATING
• 7	6.15	-7.00	Perfectly acceptable
• 6	5.29	-6.14	Acceptable
• 5	4.43	-5.28	Slightly acceptable
• 4	3.58	-4.42	Neutral
• 3	2.72	-3.57	Slightly unacceptable
• 2	1.86	-2.71	Unacceptable
• 1	1.00	-1.85	Totally unacceptable

- **Data analysis**

- Means and averages
- Analysis of variance

- **Microbial and nutritive analysis**

- Sample of the best formulation was submitted to SGS Philippines

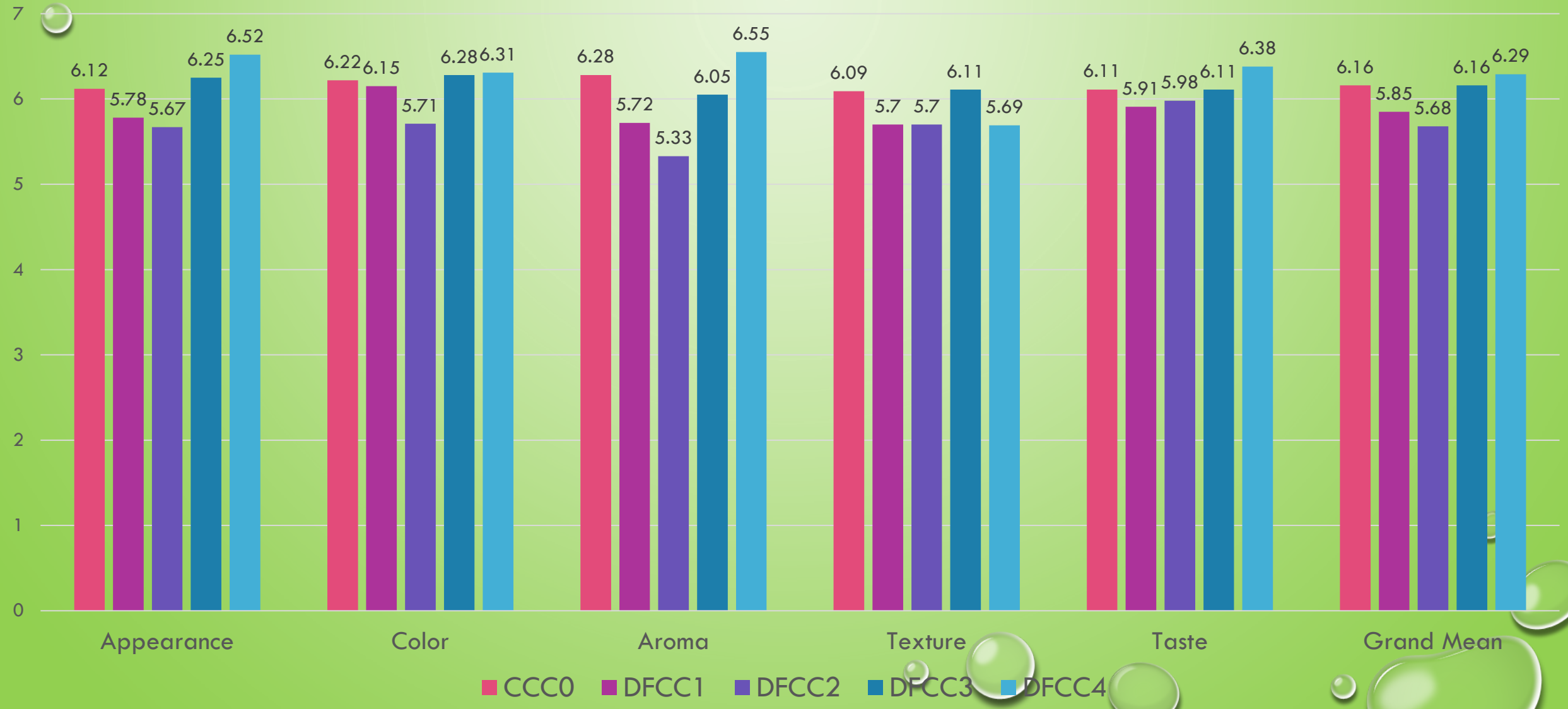
- **Shelf life test**

- refrigerator and room temperature

SUMMARY TABLE ON THE SENSORY QUALITIES OF DRAGON FRUIT CUPCAKES

	PARAMETERS						
Treatment	Appearance	Color	Aroma	Texture	Taste	Grand Mean	DR
CCCO	6.12	6.22	6.28	6.09	6.11	6.16	PA
DFCC1	5.78	6.15	5.72	5.70	5.91	5.85	A
DFCC2	5.67	5.71	5.33	5.70	5.98	5.68	A
DFCC3	6.25	6.28	6.05	6.11	6.11	6.16	PA
DFCC4	6.52	6.31	6.55	5.69	6.38	6.29	PA

GRAPHICAL SUMMARY ON THE SENSORY QUALITIES OF DRAGON FRUIT CUPCAKES



STANDARD PROCEDURE IN MAKING DRAGON FRUIT CUPCAKE

PROCESS	PROCEDURAL LIMIT
PREPARATION OF TOOLS AND EQUIPMENT	Pre-heat the oven and prepare all tools needed and make them accessible
PREPARATION OF INGREDIENTS	MEASURE ALL INGREDIENTS
MIXING	Combining all the ingredients together following correct procedure
BAKING	Place batter to lined muffin pans and bake in the pre-heated oven for 15-20 minutes or until done
COOLING AND PACKING and STORING	Place in a cake rack. Let it cool before packing. Refrigerate for longer shelf life.

Proximate and Microbial Analysis of the Dragon fruit cupcake

PROXIMATE ANALYSIS

Analysis Name	Result
Ash	0.70 %
Crude fat	19.13 %
Crude Protein (Nx6.25)	4.70%
Moisture	18.00 %
Calories from Carbohydrates	229.88 Cal/100 g
Calories from Fat	172.17 Cal/100 g
Calories from Protein	18.80 Cal/100 g
Total Calories	420.85 Cal/100 g
Total Carbohydrates	57.47 %

MICROBIAL ANALYSIS

Analysis Name	Result	Methodology
Total Plate count	<250 est. CFU/g	FDA BAM Ch. 3

SHELF/STORAGE LIFE

Figure 1. Different formulations of cupcakes evaluated for shelf life

Marketability of Dragon Fruit Cup cakes

	STUDENTS		FACULTY	
	N	%	N	%
Willingness to buy the product				
YES	86	100	7	100
Which among the treatments do they prefer to buy?				
T0	18	20.94	1	14.29
T1	12	13.95	0	0
T3	8	9.30	0	0
T4	48	55.81	6	85.71
Preferred price				
10 pesos	60	69.77	6	85.71
12 pesos	26	30.23	1	14.29

COST AND RETURN ANALYSIS

	Treatments				
	To	T1	T2	T3	T4
Total cost	PHP 77.24	PHP74.99	PHP 72.74	PHP 70.49	PHP 68.24
30% Mark Up	23.17/ 100.41	22.50/ 97.49	21.82/ 94.56	21.15/ 91.64	20.47/ 88.712
Per unit Cost/Cost per piece	PHP 6.69	PHP 6.50	PHP 6.30	PHP 6.11	PHP 5.91
Yield (pieces)	15	15	15	15	15
SELLING PRICE	10.00	10.00	10.00	10.00	10.00
TOTAL SALES	150.00	150.00	150.00	150.00	150.00
ROI	.49/49%	.54/54%	.59/59%	0.64/64%	.69/69%

CONCLUSION

- Dragon fruit can be used as a substitute of carrots in making cupcake.
- The use of 100% dragon fruit as alternative to carrots produces cupcakes that are superior in appearance, color, texture and taste
- The dragon fruit cupcakes can be commercialized as an additional source of income of farmers because of its long shelf life and storage ability.
- The use of dragon fruit rejects in the manufacture of dragon fruit cupcakes increases the income or net return and is a potential enterprise for dragon fruit growers and their families.

RECOMMENDATIONS

- Further enhancements must be done with the products to further lengthen its shelf life in order to have a wider market reach.
- Development of a good packaging material and labels must be done to lengthen its shelf life and to improve the products' marketability.
- More in depth laboratory analysis of the dragon fruit cakes and the carrot cakes can be done to compare their nutrients especially for vitamins and minerals.
- The technology must be piloted and tested for commercialization.

THANK YOU