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STUDY OF VALUE ADDED PASTA WITH INCORPORATION OF SHATAVARI (ASPARAGUS RACEMOSUS) POWDER

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ABSTRACT :

Pasta cooked till aldente in boiling salted water and tossed in cheese sauce , is one of the type of delicious food preparation which always has been appreciated by each and every age group of people in India. Inspite of being so popular food, this pasta has always been treated as unhealthy diet. This is because major component of pasta is refined flour which content high percentage of gluten and this gluten is responsible for celiac disease. The present study is an attempt to improve nutritional value of this pasta. Whole wheat pasta could be easy alternative for refined flour pasta. But taste of whole wheat pasta has never been appreciated. Addition of 25 gm of Shatavari powder in 175 gm of refined flour, with 1 beaten egg and 15 ml of olive oil, resulted in pasta dough which is tasty as well as nutritious. Shatavari (asparagus racemosus) increases the production of prolactin, a harmone that is important for breastfeeding. Shatavari also an adaptogenic herb, which are said to help body cope with physical and emotional stress. Shatavari is one of the type of herb which also has antioxidant properties, which prevent free radical cell damage. The present study reports on the preparation of pasta with regular refined flour dough & shatavari mixed dough. The sensory evaluation was carried out by 50 panelists using a hedonic scale. Panelists' response was towards liking value added pasta that is pasta dough with shatavari. Although higher scores for all attributes were observed for shatavari dough pasta than regular pasta, no statistical significant difference was observed between two types of pasta for many attributes. So this value added pasta could be substitute for regular pasta. This is the biggest achievement of this research. The major outcome of this research was nutritional value of pasta has been increased hence it is quite safe for consumption to kids, pregnant women, lactating mothers as well as senior citizens. This research was carried out for continuous 15 days. Sensory evaluation score shows the overall acceptability of this value added pasta.

Keywords : Shatavari , Pasta, Nutritional value, safe for consumption, overall acceptability,herb.

1. Introduction :

Pasta is a type of food which is mostly consider as international dish. It is made from flour, water, eggs formation into various shapes [1]. Made in or tossed in various sauce like tomato sauce, white sauce, pink sauce etc. sometimes pasta is also stuffed for example cannelloni pasta we can stuffed with any stuffing, cheese and spinach or minced meat etc.Pasta is divided into various types for example dried pasta and fresh pasta. If we come to the shapes, there and various types of shape in pasta common forms are short pasta. Tube pasta, flat shape pasta or sheet pasta [2]. pasta dishes are sometime simple, but the individual dishes are in various preparations of pasta. Some pasta dishes served as first course or for light lunches, sometimes as a salad or sometimes as a salad [3].
Inspite of being so popular food, this pasta has always been treated as unhealthy diet. This is because major component of pasta is refined flour which content high percentage of gluten and this gluten is responsible for celiac disease. Whole wheat pasta it could be good and healthy option. But the taste of whole wheat pasta has never been appreciated as compare to gluten or refined flour pasta [5]. If we search about nutritional value of pasta then cooked plain pasta is 31% starch, 6% and low in fat. Sometimes pasta made from whole wheat grain to reduce the fat content of pasta [4].

Shatavari is consider to be very nutrient Indian herb. Botanical name of shatavari is “Asparagus Racemosus”. Shatavari is available in powder form.
Shatavari powder is prepare from the roots of Asparagus Racemosus plant. So basically it is root powder of herbal plant. Shatavari is consider to be antioxidant herb. Antioxidant herbs are always useful to relieve stress.
In Ayurveda this shatavari has been pronounced as female tonic During my research I have also observed that shatavari also helped to women in productive system. Shatavari also improves fertility systems.
Moderate consumption of shatavari powder in diet will help to increase prolactin, which is the harmon useful for breastfeeding [7]. In indian Ayurveda shatavari named as “Queen of herb”.
Inspite of being such a versatile and nutritive Indian herb, this hardly has been used in Indian culinary science.
Culinary industry may be haven’t aware about nutritive value of shatavari or it may be not spoken or promoted herb as a part of culinary science.

2. Methods And Material :

Shatavari powder purchased from local market situated in Dahisar (East), Mumbai suburb. Shatavari powder was cream in colour. To prepare pasta following ingredients mixed properly.

Regular pasta ingredients:
Refined flour : 175gm,
Whole egg : 1 no,
Olive oil: 15 ml,
room temperature water : 30 ml.

Value added pasta:
Refined flour : 175gm,
Whole egg : 1 no,
Olive oil: 15 ml,
Shatavari powder : 25gm
room temperature water : 30 ml.

Prepared a tight dough with content ingredients. Rested the dough in the refrigerator for 1 hour minimum (maximum 48 hours). After taking out dough from refrigerator, rolled it in thin shit(3 mm). Once this sheets are ready, cut this shits into desired shape. For my research the shape which I took it was Fettuccini. This fettuccini shaped pasta looks like rectangular long strips. Prepared pasta again kept in refrigerator for 15-20 minutes. Removed this fettuccini pasta from refrigerator and cook till al dente (80% cook) in boiling salted water. Strained this pasta and kept under room temperature running water, this will stop the cooking process of pasta further. Drizzled some oil into this cooked pasta so that it will not stick to each other. Tossed this pasta in 25 gm of melted butter and ½ tsp of salt.

Sensory Evaluation: Sensory evaluation of prepared both the versions of pasta was carried out by 50 students belonging to the Department of Hospitality and Catering of Patkar-Varde College, Goregaon (West), Mumbai, Maharashtra.
Five point hedonic scale was used for sensory evaluation. The evaluation was carried out for the following attributes - Color, Taste, Texture, Appearance and Overall Acceptability.
Nutritional evaluation: The regular and value added pasta were analyzed for nutrients content for following nutrients- Moisture, total ash, protein, crude fiber, fat, carbohydrates , energy, sodium, potassium, iron, calcium.
Statistical Analysis : Given statistical data were formed into graphs by using excel. On the basis of graphs conclusion has been made whether value added pasta were liked by panelist or not.

3. Results And Discussion :

The results of our preliminary study were really encouraging. We were able to prepare value added pasta with addition of Indian herb that is shatavari. Prepared pasta was looking same as like regular pasta as shown in figure 1 , regular pasta and figure 2, value added pasta. No significance difference were found in this both the pasta on physical appearance. We could easily roll this pasta around the fork as like our regular pasta.

Figure 1 : Regular pasta

Figure 2 : Value added pasta served along with sauce

The sensory evaluation of two varieties of pastas was performed. The following attributes has been taken in consideration for sensory evaluation –
Color, Taste, Texture, Appearance and Overall Acceptability.

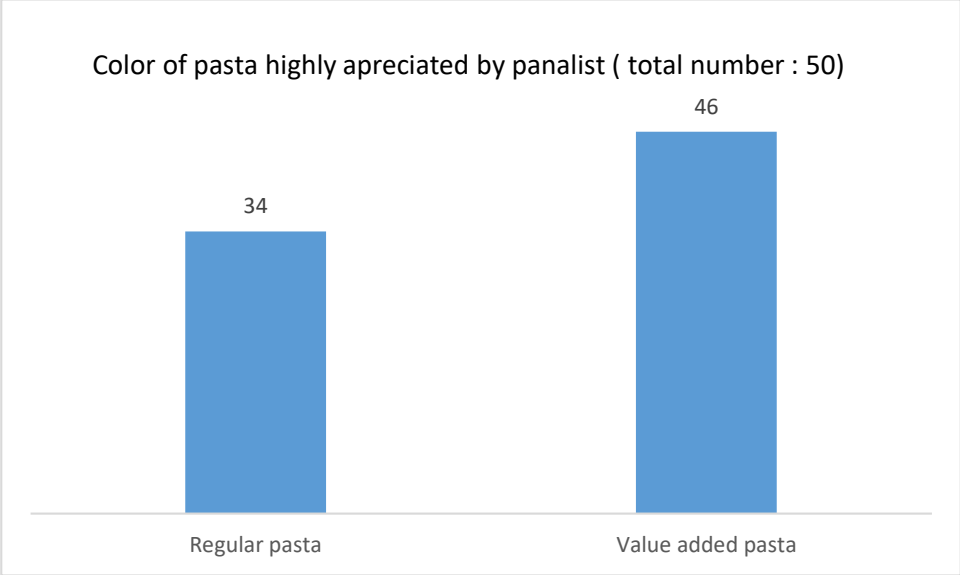
Responses of given attributes are as follows.

Table 1 : Distribution of subjects for Color of pasta

5 point hedonic scale	Evaluation Value consideration	Regular pasta	Value Added pasta
1	Culinary product not apreciated	0	0
2	Culinary product not apreciated	0	0
3	Culinary product not apreciated	12	1
4	Culinary product highly apreciated	20	22
5	Culinary product highly apreciated	18	27

Graph 1 :

Graphical analysis showing total numberof panelist highly appreciated the color of both the pasta.



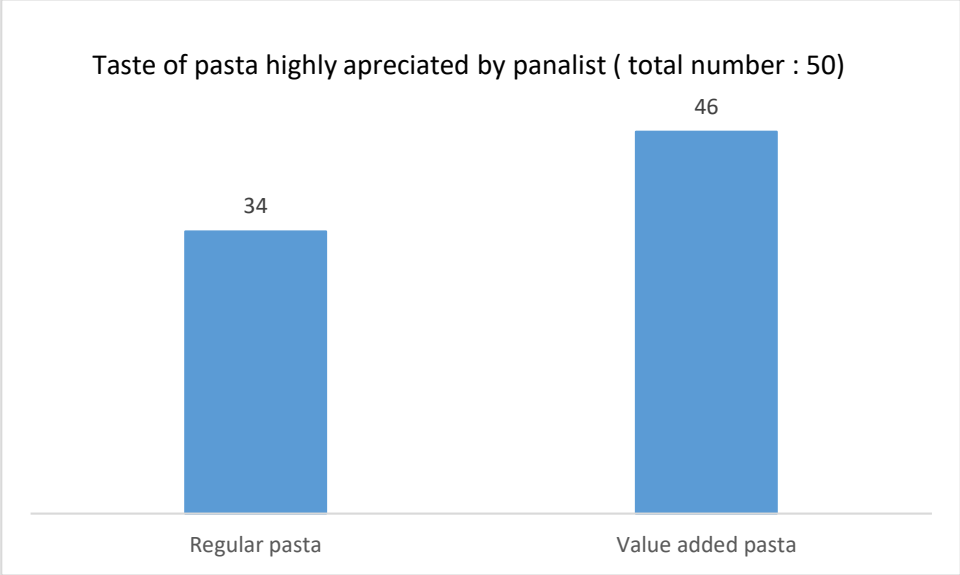
As per the result shown in table 1 and graph 1, for the color of pasta total 38 panalist has highly appreciated color of regular pasta, and total 49 panalist were highly appreciated color of value added pasta. From the table no 1 only hedonic scale 4 and 5 values has taken in consideration.

Bothe the version of pasta were evaluated for taste. Result of that is shown in table no 2 and graph 2

Table 2 : Distribution of subjects for taste of pasta

5 point hedonic scale	Evaluation Value consideration	Regular pasta	Value Added pasta
1	Culinary product not apreciated	0	0
2	Culinary product not apreciated	0	0
3	Culinary product neutrally appreciated	04	3
4	Culinary product highly apreciated	18	15
5	Culinary product highly apreciated	28	32

Graph 2 : Graphical analysis showing total number of panelist highly appreciated the taste of both the pasta



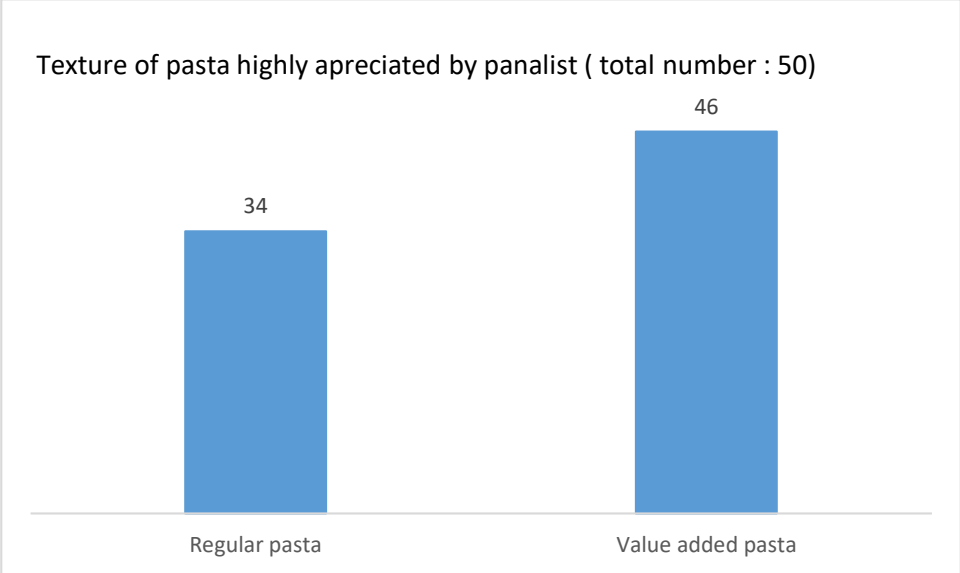
As per the result shown in table 2 and graph 2, It is clearly analyzed that there no significance difference between this two pasta in terms of taste. As adding shatavari powder in regular pasta has not really done any changes in taste of the pasta.

Bothe the version of pasta were evaluated for Texture. Result of that is shown in table no. 3 and graph no. 3

Table 3 : Distribution of subjects for texture of pasta

5 point hedonic scale	Evaluation Value consideration	Regular pasta	Value Added pasta
1	Culinary product not apreciated	0	0
2	Culinary product not apreciated	2	0
3	Culinary product neutrally appreciated	8	3
4	Culinary product highly apreciated	18	19
5	Culinary product highly apreciated	22	28

Graph 3 : Graphical analysis showing total number of panelist highly appreciated the texture of both the pasta



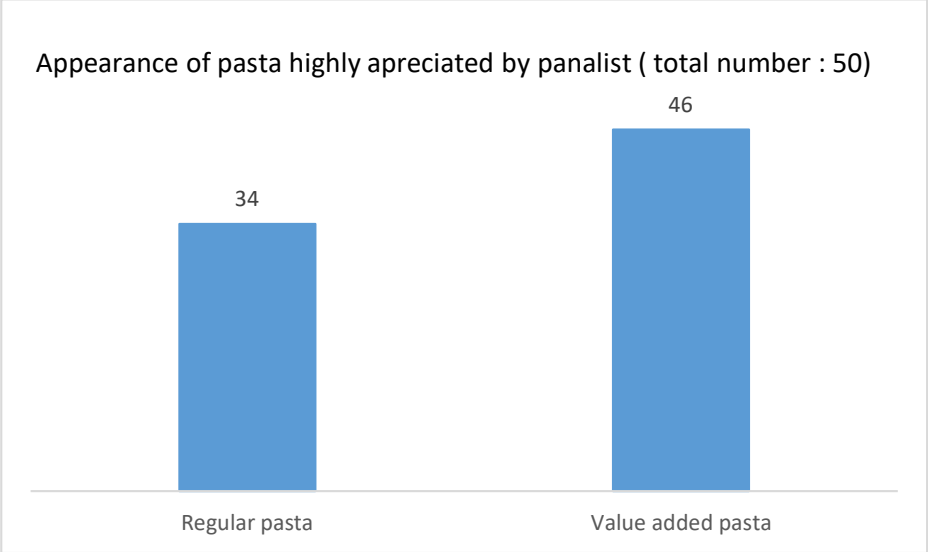
As per the result shown in table 3 and graph 3, It is clearly analyzed that texture of value added pasta is slightly better than texture of regular pasta. We also have analyzed from the graph that although texture of value added pasta has been appreciated more but no significance difference between two pasta found in terms of Texture difference.

Bothe the version of pasta were evaluated for Appearance. Result of that is shown in table no. 4 and graph no. 4

Table 4 : Distribution of subjects for Appearance of pasta

5 point hedonic scale	Evaluation Value consideration	Regular pasta	Value Added pasta
1	Culinary product not apreciated	0	0
2	Culinary product not apreciated	0	0
3	Culinary product neutrally appreciated	7	3
4	Culinary product highly apreciated	20	19
5	Culinary product highly apreciated	23	28

Graph 4 : Graphical analysis showing total number of panelist highly appreciated the Appearance of both the pasta



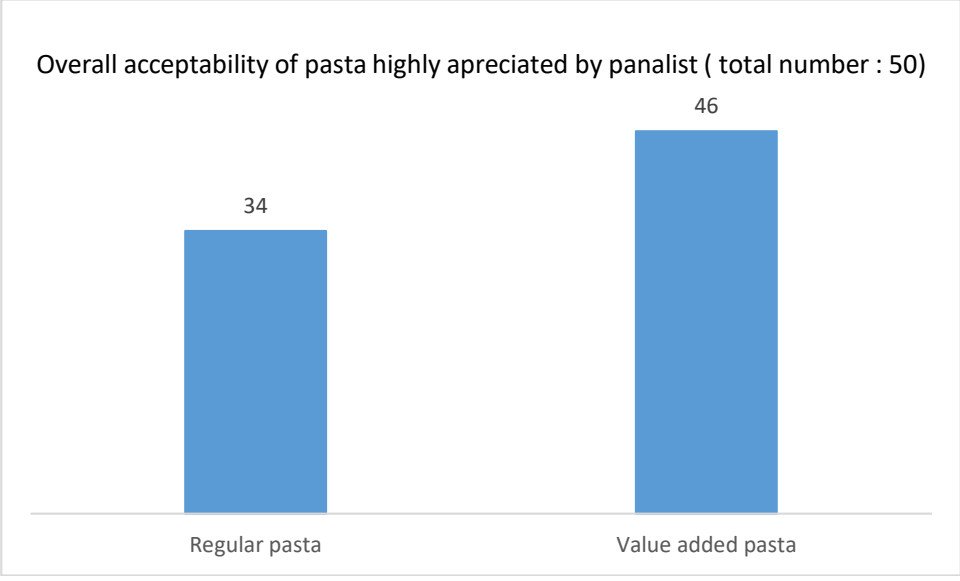
As per the result shown in table 4 and graph 4, It is clearly analyzed that Appearance of value added pasta is slightly better than Appearance of regular pasta. We also have analyzed from the graph that although Appearance of value added pasta has been appreciated more but no significance difference between two pasta found in terms of Texture difference.

Bothe the version of pasta were evaluated for Overall Acceptability. Result of that is shown in table no. 5 and graph no. 5

Table 5 : Distribution of subjects for Overall acceptability of Pasta

5 point hedonic scale	Evaluation Value consideration	Regular pasta	Value Added pasta
1	Culinary product not apreciated	1	0
2	Culinary product not apreciated	1	0
3	Culinary product neutrally appreciated	14	4
4	Culinary product highly apreciated	20	16
5	Culinary product highly apreciated	14	30

Graph 5 : Graphical analysis showing total number of panelist highly appreciated the Overall acceptability of both the pasta



As per above data for overall acceptability of value added pasta. 46 out of 50 panalist have given their liking for value added pasta over regular pasta.

Our study has demonstrated that the pasta that was developed using shatavari powder was well accepted. The ratings on Hedonic scale indicate that for all attributes the preference was very high compared to non preference. Both the types of pasta were liked by the panelists, Value

added pasta acquiring more preference than regular variety. Thus these findings suggest a very effective use of shatavari powder in pasta to improve the nutritional value of pasta.

Nutritional Evaluation was carried out for both varieties of pasta. Both the sample were taste at Anazeal Analyticals & Research Pvt. Ltd. Certified lab. Results are shown in table no.6

Table no. 6

Nutrients	**Regular Pasta**	**Value AddedProtein, Pasta**
Moisture	66.11 gm	62.19 gm
Total Ash	0.25 gm	0.25 gm
Protein	4.63 gm	4.64 gm
Crude fiber	0.18 gm	0.20 gm
Fat	4.93 gm	3.72 gm
Carbohydrates	23.90 gm	28.60 gm
Energy	158 Kcal	168 kcal
Sodium	103 mg	83.92 mg
Potassium	12.62 mg	60.61 mg
Iron	2.58 mg	2.80 mg
Calcium	14 mg	14 mg

As per the table no.6 Nutritional evaluation table. There is no much difference In terms of comparisons between both the pastas. Few highlights of this table was, fats in Value added pasta is less that regular pasta. This will sure encourage us to consume our value added pasta. Also an amount of carbohydrates, energy, crude fat, iron and protein is slightly higher than regular pasta.
Amount of potassium found in prepared value added pasta was much higher than regular pasta. This will surely help us to maintain fluid level in body.

4. Conclusion and Further Scope :

Our study has demonstrated that the pasta that was developed using shatavari was well accepted over regular pasta. Although this pasta were overall accepted by panelist but then to not much difference were found in the taste of both the pasta.
This was really encouraging for us as we could able to improve the nutritive value of pasta without making much changes in the actual taste of the pasta.
This could be the best way of using Indian hers on International culinary platform.
From the study we have also conclude that value added pasta has more nutritive value other than regular pasta.

4.1 Further Scope :

1. Shatavari powder can added in many more international culinary recipes to improve their nutritive value.
2. We can promote our own herbs and its uses in culinary on Global platform.

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