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To study a standardisation and development of product of red rice (*Oryza sativa*) and their organoleptic evaluation

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Abstract
Red Rice is rich in iron and vitamin, which together help in the production RBC in our body, which is considered as an Essential element for good skin health. The antioxidants in the rice may help in fighting free radicals, which protect our skin it is rich in manganese and antioxidants, and hence, is highly recommended for patients with diabetes. Developed product of red rice are idli, Mexican fried rice, dosa, kheer, fara by using score card method (Comparative). The result of red rice based product for red rice idli, Mexican fried rice, red rice dosa, red rice kheer, red rice fara (T_1) Experimental were best in all treatment in case of comparative attribute were 8.8, 8.9, 8.9, 8.9 respectively. Development product were accepted by panel members.

Keywords: Red rice, *Oryza sativa* L., Weedy rice, RBC

Introduction
In Asian countries, where red rice (*Oryza sativa*) is the staple food of more than two-thirds of the population, it has become a synonym of food itself. So much so that the United Nations declared the year 2004, the International Year of Rice (IYR). Such dedication of an International Year to a single agricultural commodity was unprecedented in the history of the United Nations. The theme of IYR was Rice for Life, which reflected the importance of rice as a primary food source, and set the tone for a major World Rice Research Conference in Japan during November 2004. It can be partially or fully covered with husk. Red rice can be seen in weedy, wild and cultivated types. Red rice has been cultivated in Sri Lanka, China, the United States, Korea and India. In India, it is widely grown in Karnataka, Tamil Nadu, Kerala, Orissa and Madhya Pradesh. Red rice is a medium grain rice which grows in the Eastern Himalayas. Producers semi-mill the rice, meaning some of the red-colored husk remains on the rice. Red rice is also a great source of selenium, which protects the body against infections. Red rice has a compound called Monacolin K., which helps with lowering the levels of LDL or bad cholesterol. This can be a healthy choice for people watching their cardiovascular health. It is loaded with both soluble and insoluble fiber as the outer layer of the rice is kept intact, where all the fiber comes from. Nowadays, it is even prescribed by the doctors as an alternative to medicine to get rid of mild symptoms of high-cholesterol. Red Rice is rich in iron and vitamin, which together help in the production RBC (red blood corpuscles) in our body, which is considered as an Essential element for good skin health. The antioxidants in the rice may help in fighting free radicals, which protect our skin Red Rice is rich in manganese and antioxidants, and hence, is highly recommended for patients with diabetes. Rice (*Oryza sativa* L.) is the most important crop in terms of total production in the developing world and the number of consumers dependent on it as a staple food. Rice is cultivated widely under flooded and upland culture and consumed mainly in Asia with < 5% entering international markets. Glycemic index correlates negatively with amylose content. The high content of γ-oryzanols and tools in rice bran and brown rice contributes to the hypocholesterolemic and anticancer properties of rice. Red rice is a type of rice containing pigments giving the hulled rice a red appearance. Kaur B *et al*., (2015) [3] Limited research exists on how different oil types and time of addition affect starch digestibility of rice. White rice digestibility was not affected by oil type, but was affected by addition time of oil.

Kim J.K *et al*., (2010) [6] Flavonoids and carotenoids of pigmented rice (*Oryza sativa* L.), including five black cultivars and two red cultivars, from Korea were characterized to determine the diversity among the phytochemicals and to analyze the relationships among their contents. Black cultivars were higher in flavonoids and carotenoids than the red and white cultivars. The experimental "To study a standardization and development of product of "red rice" (*Oryza sativa*) and their organoleptic evaluation." The different material use in experiment and the techniques employed.

Methods

Collection of ingredients.
Processing of raw materials.
Development of red rice products.
Sensory evaluation.
Statistical analysis.

Collection of ingredients: The required material will be purchased from local market. Processing of raw materials.

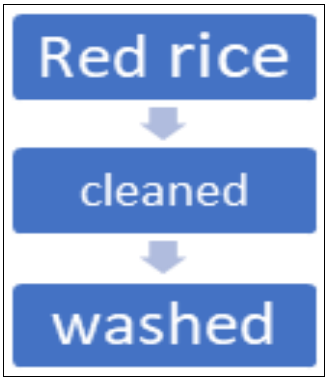

Fig 3.1: flow chart of processing of raw material

Sensory evaluation

The prepared product will be evaluated by the random chosen panelists to determine, appearance, colour, taste, texture, over all acceptability. The quality parameters will be Qualified and the main score of the five evaluation will be calculated.

1. Total number of treatment.
2. Total number of replication.
3. Total number of trails.

Statistical analysis

The data obtained from various parameter will be analyzed by appropriate statistical methods.

Formula

$$\text{Average} = \frac{\text{N x 100}}{\text{N}}$$

Where,
N = Total number of observation
N = Sum of the observation.

Results and Discussion

The data were collected on different aspects per plan were tabulated and analysed statistically. The result from the analysis presented and discussed chapter in the following sequence.

Calculation of nutritive value of red rice.

Organoleptic evaluation of red rice based products.

Calculation of nutritive value of red rice.

Calculation of nutritive value of red rice (100gm).

Table 1: Nutrients

Nutrients	Total
Energy	130 kcal
Protein	2.3 g
Carbohydrate	28.2 g
Fiber	0.7 gm
Fat	0.9g
Calcium	0.8 g
Iron	2.9 mg
Potassium	77 mg
Sodium	1 mg

The nutritive value of red rice was calculated with the help of "Nutritive value of Indian foods" given by ICMR (2004) [5]. Table shows that the total energy, protein, fat, minerals, fibre, carbohydrate, calcium, potassium, sodium and iron. Value of most acceptable red rice was 189 kcal, 3.81 g, 0.32 g, 0.7 gm, 42.55 g, 0.8 g, 77 mg, 1 mg, 2.9 mg respectively.

Organoleptic evaluation of red rice based products

- Flavour and taste.
- Body and texture.
- Colour and appearance.
- Overall acceptability.

Table 2: Organoleptic evaluation of Mexican fried rice

Product	Flavour &Taste	Body & Texture	Colour & Appearance	Overall acceptability
T0(controlled)	7.7	7.8	7.7	7.8
T1(experimental)	8.8	8.9	8.9	8.9

Table 2 shows that the experiment (T_1) obtained maximum 8.8, 8.9, 8.9, 8.9 for Flavour &Taste, Body & Texture, Colour & Appearance, Overall acceptability; While control (T_0) 8.8, 8.9, 8.9, 8.9 for Flavour & Taste, Body & Texture, Colour & Appearance, Overall acceptability respectively. This indicate that the experimental T_1 red rice was found to be fallen under category of "like very much".

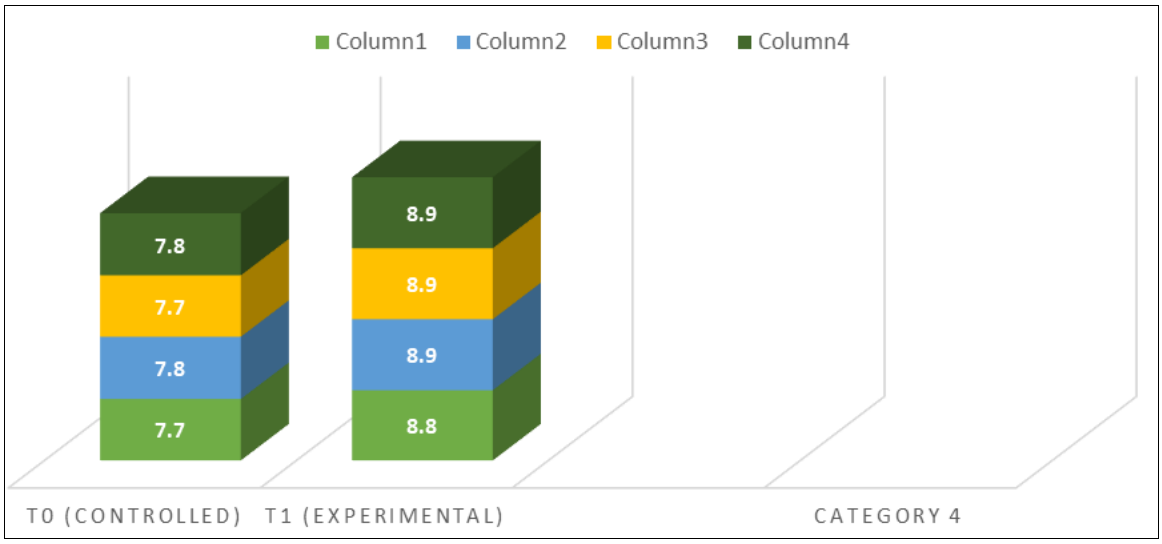

Fig 1: Organoleptic evaluation of Mexican fried rice

Conclusion

The present investigation entitled "To study a standardisation and development of product of Red rice (*Oryza sativa*) and their organoleptic evaluation." was carried out to standardize Red rice In view of the fact regarding nutritional quality of red rice (ICMR, 2004) [5] was made to develop acceptable Red rice based products. Experimental (T_1) Mexican fried rice obtained maximum 8.8, 8.9, 8.9, 8.9 for Flavour &Taste, Body & Texture, Colour & Appearance, Overall acceptability; While control (T_0) 8.8, 8.9, 8.9, 8.9 for Flavour & Taste, Body & Texture, Colour &Appearance, Overall acceptability respectively. This indicate that the experimental T_1 red rice was found to be fallen under category of "like very much". The developed product were given to the panel of 10 judges, product were tested for Flavour and taste, body and texture, Colour and appearance and overall acceptability. The organoleptic evaluation of product was done by using score card method (0-9 point comparative test). The result of Red rice products for Mexican fried rice, red rice Dosa, red rice Idli, red rice kheer, red rice Fara.

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