Comparative Studies of Nutritional values of Rough Rice (*Oryza sativa*) And Jangli Rice(*Echinochola colona*)

Abstract

Food is necessary for growth and health .Carbohydrate protein and fat are three main type of macronutrients . vitamins and minerals are two main micronutrients. All macro and micro nutrients should be taken in adequate and balanced amount. Any one taken in large amount or low amount can cause disease or malnutrition.

Comparative account of Nutritional values of *Oryza sativa* and *Echinochola colona* are discussed in the present paper. *Oryza sativa* is staple food in East India, North India and South India . West India (specially Rajasthan) *Triticum aestivum* , *Pennisetum glaucum , Sorgum bicolor* ,*Hordeum vulgare* , *Cicer arietinum* are taken as food . During fast *Echinochola colona* *Fagopyrum tataricum* , *Amaranthus* , *Eleocharis dulcis* are taken .Comparative studies of nutritional values of *Oryza sativa* and *Echinochola colona* are done in the present paper. Indian Himalayan saints observe fast and eat selected food during fast . These saints are disease free and live long life. Now a days world is suffering from Corona virus vegetarian diet and fast diet can prevent this .

Introduction

Oryza sativa belongs to family *Poaceae* and *Echinochloa* also belongs to family *Poaceae* . Common name of first is Rice and second one is jangali rice .

Oryza sativa is carbohydrate rich diet and *Echinochloa colona* have both essential and non essential aminoacids in sufficient amount.

Nutritional values of *Oryza sativa* and *Echinochola colona* are discussed in the present paper. *Echinochola colona* is taken during fast in India and *Oryza sativa* is rice taken daily with food.

Methods

100 grams of Oryza sativa and 100 grams of Echinocola colona were taken dried and powdered. Data were analysed with the help of TEM and Chromatography manager software.

Observations and Results

Nutritional values of *Oryza sativa* and *Echinochola colona* were following :

S. No.	Nutritional Value	*Oryza sativa(mg /kg)*	*Echinochola colona (mg / Kg)*
1.	Protein (g Nx5.95)	7.2	10.7
2.	Fat (g)	2.1g	5.9g
3.	Fiber	8-10.3	12.3
4.	Ash	3-5	8.7
5.	Fiber crude	-	12.3
6.	Carbohydrate	65-74%	51%
7.	Neutral detergent fiber	3-4	-
8.	Sucrose	-	1.0%
9.	D Glucose	-	0.4 %
10.	D Fructose	-	0.4%
11.	Thiamine	0.27-0.6	-
12.	Riboflavin	.05-0.1	-
13.	Niacin	3-5.7	-
14.	Tochopherol	0.9-2	-
15.	Calcium(mg)	11-80	0.05%
16.	Phosphorus	0.17-0.39	0.41%
17.	Phytin	0.19-0.38	
18.	Iron	1.3-6	108mg/kg
19.	Zinc	1.7-6	50
20.	Glycine	-	2.7g
21.	Alanine	-	10.4g
22.	Serine	-	4.8g

23.	Threonine*	4.6	3.4g
24.	Valine*	7.1	5.9g
25.	Leucine*	6.8-8.9	10.8g
26.	Isoleucine*	3-4.5	4.8g
27.	Proline	-	8.3g
28.	Tyrosine	6.1	4.4g
29.	Tryptophan*	2.0	-
30.	Phenylalanine*	10.7	6.8%
31.	Cystine	-	.8g
32.	Methionine*	4.6	1.7g
33.	Asparagine	-	-
34.	Aspartic acid	-	5.1g
35.	Glutamine	-	-
36.	Glutamic acid		25.4g
37.	Arginine*	-	41g
38.	Lysine*	3.2-4.6	2.2g
39.	Histidine*	1.6-2.7	2.2g
40.	Amino acid score		
41.	Fatty acid		14/100g saturated
42.	Monounsaturated		16
43.	Polyunsaturated		18.
44.	Minerals (Sulphur)	-	0.1%
45.	Magnisium	-	.23%
46.	Sodium	-	.01%
47.	Potasium	-	0.3%
48.	Magnese	-	28mg/kg
49.	Copper	-	4mg/kg
50.	Alluminium	-	88mg

Discussion

Although *Oryza sativa* is eaten more in comparison to *Echinochola colona* , later is more nutritious. Protein and fat content were more in *E. colona ,* Fiber content were also more in *Echinochloa colona* , Ash and crude fiber were less in *O.sativa*. Value of carbohydrate were more in O.sativa. Vitamin B were negligible in *E. colona*. Minerals ,nutrients and Aminoacids were abundant in E.colona.

Conclusion

Although *Oryza sativa* is nutritious *Echinochola colona* is more valuable having more Essential and non essential amino acids and Minerals. Protein content is more in *Echinocola colona.* Ammount of fat and fibers are also more in *Echinochola colona. Aspartic acid , Glutamic* acid , and Arginine are present in *Echinochloa colona* and absent in *Oryza sativa*.*Glycine* , *Alanine* and *serine* are present in *Echinochloa colona* and absent in Oryza sativa. Minerals like sodium, Potasium , Magnesium and copper are present in *Echinochloa colona* and absent in *Oryza sativa. Echinochola colona* is having more nutritional values.Indian Saints from Himalayas eat less, observe fast for most of the time and eat Amaranthus, Echinochloa colona, Fagopyrum esculentum, Trapa, vegetables and fruits. They do not suffer from diseases and live long life.

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