To assess the Awareness of Pseudo-Cereals among Food and Nutrition Students of Indore City

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Abstract

Pseudo-cereals are a powerhouse of nutrients. There is a need to explore them further and bring them in our daily diet. Even though pseudo-cereals seem more superior than cereals in context of their chemical composition, the anti-nutrients present in them reduces the bioavailability of the nutritional components. As nutritional deficiency is becoming more prevalent among the human population throughout the globe, food producers are expected to develop novel strategies for their improved processing. The present study aims to assess the awareness of pseudo-cereals among food and nutrition students of Indore, with a focus on understanding their knowledge, perceptions, and potential gaps in awareness regarding these grains. The study included 200 subjects with age range (18-30) years, of colleges of Food and Nutrition of Indore (Madhya Pradesh). The assessment on awareness of pseudo-cereals among food and nutrition students was done based on their knowledge, perceptions, and potential gaps in awareness regarding these grains. The data was calculated by advance excel 2007 and statistical packaged tool. Results shows that there was statistically non-significant ($p > 0.05$) difference between in the respondents on awareness and identification of pseudo-cereals.

Keywords: Pseudo-cereals; Chemical composition; Anti-nutrients; Protein content; Fiber content.

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INTRODUCTION

Cereals have been known to play a pivotal role to meet the demand of the human population since time immemorial. Cereals like corn, wheat and rice constitute approximately about 80% food consumption and are bio-fortified to improve the vitamin and other essential micro-nutrients. On the other hand, pseudo-cereals are naturally enriched with these essential micronutrients, but have not been explored for large scale production and consumption till date. Pseudo cereals are

dicotyledonous plants that are different from cereals in structure and function. In this context, Food and Agriculture Organization (FAO) has identified many plants as under utilized, which can significantly contribute for improving nutrition and health, enhance food basket and livelihoods, future food security and sustainable development. These underutilized crops offer an immense potential in the functional food sector to combat hidden hunger crisis and offer the options of income generation. Moreover, since underutilized crops are closely knit to cultural traditions and therefore are envisaged to have a role in supporting social diversity. However, now attention is turned from the underutilized crops and showing considerable interest in pseudo-cereals because of their high resiliency towards the abiotic stress, nutritional, and phytochemical potential and their usage in gluten free products. In near future, as the human population is predicted to rise, it will be needed to adopt an interdisciplinary approach to combat food crisis by not only improving the quality of available food by enrichment or biofortification but also by exploring other potential plants which are already enriched with required micronutrients which is an important aspect of food security.

Types of Pseudo-cereals

Under the term "pseudo-cereals" a group of dicotyledonous plants is summarized that produce starch rich grains that can be used similarly to the monocotyledonous cereals, although they differ regarding their botanical classification. The most common pseudocereals are amaranth, quinoa and buckwheat.

METHODOLOGY

The present study desires to assess the awareness of pseudo-cereals among food and nutrition students of Indore, with a focus on understanding their knowledge, perceptions, and potential gaps in awareness regarding these grains.

The study was carried out in colleges of Food and Nutrition of Indore (Madhya Pradesh) in order to achieve adequate number of the sample size for the study. The sample was collected in age group between 18-30 years. The sample size for this study was composed of 200 subjects. Students of Food and Nutrition from colleges (Shri Vaishnav Vidyapeeth Vishwavidyalaya, Devi Ahilya Vishwavidyalaya, Mata Jijabai Govt. PG Girls College and Government Maharani Laxmi Bai Girls PG College) of Indore were the study population for data collection. To collect data from the respondents, a self-administered questionnaire was created. The questionnaire comprised of details with nineteen questions related to knowledge, food habit and preference of pseudo cereals.

Data Analysis

The data was figured out by using an appropriate statistical tool using different processes of data analysis as per requirement.

Demographical data were calculated in percentage and for the results of awareness of pseudo-cereals among food and nutrition students, data were statistically analyzed by chi square. The p-value determines whether the relationship is significant or not. If the p-value is greater than 0.05, then the null hypothesis is retained: there is indeed no relationship exists between the variables, then no further interpretation is necessary. If the p-value is less than 0.05, then the null hypothesis is rejected, meaning that there is significant relationship between the two variables.

RESULT AND DISCUSSION

This study was carried out in colleges of Food and Nutrition of Indore (Madhya Pradesh) with a sample size of 200 subjects with age range (18-30) years. Information regarding their demographic profile, educational background and preference of pseudoceral were assessed using a pretested questionnaire. Age, Gender, and Academic level were the first step to determine the demographic profile. It is strongly correlated with educational background of subjects. The data revealed that in age group (18-24), 8 (11.76%) students selected wheat as a pseudo-cereal whereas 14 (20.58%) students selected oats as a pseudo-cereal, 16 (23.52%) selected quinoa as a pseudo-cereal, 13 (19.11%) selected barley as a pseudo-cereal and 17 (25%) selected ragi as a pseudo-cereal. In age group (25-30), 15 (11.36%) students selected wheat as a pseudo-cereal where as 20 (15.15%) students selected oats as a pseudo-cereal, 47 (35.60%) selected quinoa as a pseudo-cereal, 18 (13.63%) selected barley as a pseudo-cereal and 32 (24.24%) selected ragi as a pseudo-cereal.

Whereas, in age group (18-24), 57 students were aware of pseudo-cereal where as 11 were un-aware. In age group (25-30), 124 students were aware of pseudo-cereal whereas 8 were un-aware. In age group (18-24), 55 students considered

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pseudo-cereal as a good source of protein where as 13 didn't. In age group (25-30), 123 students considered pseudo-cereal as a good source of protein whereas 9 didn't. In age group (18-24), 56 students considered pseudo-cereal as a good source of fiber whereas 12 didn't. In age group (25-30), 121 students considered pseudo-cereal as a good source of fiber whereas 12 didn't.

From college Shri Vaishnav Vidyapeeth Vishwavidyalaya, 10 students in age group (18-24) identified the picture as cereal and 16 as pseudo-cereal and in age group (25-30), 2 students identified the picture as cereal and 3 as pseudo-cereal Hence, the difference was not statistically significant (p>0.05). From college Devi Ahilya Vishwavidyalaya, 12 students in age group (18-24) identified the picture as cereal and 11 as pseudo-cereal and in age group (25-30), 1 student identified the picture as cereal and 3 as pseudo-cereal Hence, the difference was not statistically significant (p>0.05). From college Mata Jijabai Government Girls PG College, 14 students in age group (18-24) identified the picture as cereal and 17 as pseudo-cereal and in age group (25-30), 12 students identified the picture as cereal and 4 as pseudo-cereal Hence, the difference was not statistically significant (p>0.05). From college Government Maharani Laxmi Bai Girls PG College, 17 students in age group (18-24) identified the picture as cereal and 16 as pseudo-cereal and in age group (25-30), 8 students identified the picture as cereal and 2 as pseudo-cereal Hence, the difference was not statistically significant (p>0.05). From college Choithram College of Paramedical Sciences, 14 students in age group (18-24) identified the picture as cereal and 19 as pseudo-cereal and in age group (25-30), 11 students identified the picture as cereal and 8 as pseudo-cereal Hence, the difference was not statistically significant (p>0.05).

This result shows that there is awareness of pseudo cereals among the students of Food and Nutrition. It was found that the respondents have the awareness of pseudo-cereals based on fiber and protein content.

CONCLUSION

Pseudo-cereals are a powerhouse of nutrients. There is a need to explore them further and bring them in our daily diet. Even though pseudo-cereals seem more superior then cereals in context of their chemical composition, the anti-nutrients present in them reduces the bioavailability of the nutritional components. Phytate and lower inositol phosphates binds to the minerals like calcium, zinc, magnesium, and iron, making them unavailable for absorption. As nutritional deficiency is becoming more prevalent among the human population throughout the globe, food producers are expected to develop novel strategies for their improved processing. Moreover, there is a requirement of making people aware about the benefits of pseudo-cereals so that they consider them in their diet along with the cereals which will also elevate the nutritional quality of their diet.

Based on the findings of the study, it can be concluded that food and nutrition students possess a significant level of knowledge regarding the awareness of pseudocereals. The statistical analysis, with a p-value less than 0.05, indicates a strong association between the students' level of education in food and nutrition and their awareness of pseudocereals. This suggests that the curriculum or educational programs in food and nutrition effectively equip students with the necessary knowledge about pseudocereals. These results underscore the importance of continued education and training in food and nutrition to ensure that professionals in the field remain well informed about emerging trends and developments in food science.

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