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DIETARY FIBRE CONTENT IN ETHNIC AND UNCONVENTIONAL VEGETABLES AND FRUITS GROWING IN BANGLADESH

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ABSTRACT
Dietary fibre is known to provide health benefit and protect against degenerative chronic diseases. Thus, the present study reports the total dietary fibre (TDF) content of sixty-nine selected ethnic and unconventional vegetables and fruits growing in Bangladesh. The samples were collected from different locations of Bangladesh and mixed together to ensure sample representativeness. Dietary fibre assay kit according to the AOAC method was utilized for the analysis of TDF in selected vegetables and fruits. In the ethnic varieties, the TDF content ranged from 1.02 ±0.16 to 7.16 ±0.16 g for leafy (LV), 0.18 ±0.01 to 6.71 ±0.49 g for non-leafy vegetables (NLV) and 1.21 ±0.12 to 5.29 ±0.20 g for fruits per 100 g edible portion (EP). In the unconventional items, it arrayed from 3.08 ±0.34 g to 7.75 ±0.13 g for LV and 1.02 ±0.06 to 8.82 ±0.40 g for NLV per 100 g EP. Among the analysed samples, the highest and lowest content of TDF was found in Orohordal and Mairabokong, respectively. The unconventional vegetables contained much higher content of TDF than the ethnics and the commonly consumed similar varieties. Data on TDF content in underutilized vegetables and fruits of Bangladesh is sparse. Thus, the finding of this study would fill up the data gap in the existing food composition table of Bangladesh and also would aware the people to take vegetables and fruits rich in fibres.

Keywords: Bangladesh; dietary fibre; ethnic vegetables and fruits; unconventional vegetables

INTRODUCTION
In the recent years, health benefits of dietary fibre in reducing the risk of many chronic diseases have extensively been addressed **(Venn and Mann, 2004; Streppel et al., 2008; Aune et al., 2011; Jurasová et al., 2011)**. Epidemiological and interventional studies reported that consumption of dietary fibre rich foods such as vegetables, fruits, and whole grains reduce the blood cholesterol, especially, low-density lipoprotein and blood pressure, promote weight loss and improve insulin sensitivity **(Anderson, 2003; Streppel et al., 2008; Ivanišová et al., 2017; Rana et al., 2019)**. Diet implicates the etiology of diabetes and fibre rich diets have low glycemic index and, thus, decrease diabetic incidence **(Meyer et al., 2000; Murtaugh et al., 2003; Venn and Mann, 2004; Kaline et al., 2007; Krishnan et al., 2007)**. Dietary fibre also reduce insulin need, slow down the absorption of sugar and prevent spikes after meals **(Takekawa and Matsumoto, 2012; Kamila et al., 2018)**. Risk of cancers incidence, particularly colon cancer, has also been reported to cut to those who consume high dietary fibre containing foods **(Aune et al., 2011; Dong and Qin, 2011; Alam et al., 2017a, b)**. Intake of high fibre diets also help alleviate constipation **(Dhingra et al., 2012; Stewart and Schroeder, 2013)**. Soluble fibre has been reported to improve immunity, to speed up elimination of toxic waste through the colon and to enhance digestion. They can help treat or prevent overweight or obesity **(Takekawa and Matsumoto, 2012; Kamila et al., 2018)**.

Data on dietary fibre are sparse. Bangladesh does not yet have its own dietary fibre data; some data are being generated for a few common foods. Dietary fibre data for ethnic or unconventional foods have not yet been generated or reported elsewhere. In our present-attempt to prepare a food composition database for Bangladesh with special reference to ethnic foods **(Islam et al., 2010; Islam et al., 2012; Shajib et al., 2013; Alam et al., 2016; Alam et al., 2019; Hossain et al., 2016; Islam et al., 2016; Rana et al., 2019)**, this article reports the analysis of total dietary fibre (TDF) for sixty-nine vegetables and fruits of ethnic and unconventional varieties. Data generated in present study would surely add to and enrich the existing Food Composition Tables and database for Bangladesh **(Islam et al., 2010; Islam et al., 2012; Shaheen et al., 2014)**.

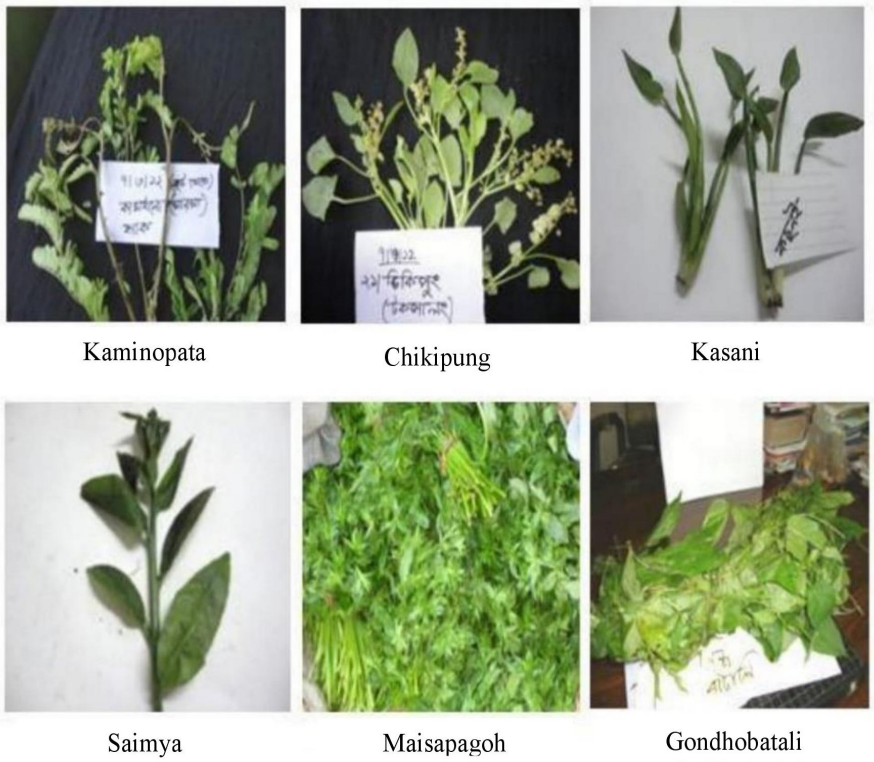

Figure 1 Photograph of the selected ethnic leafy vegetable samples studied.

Figure 2 Photograph of the selected ethnic non-leafy vegetable and fruit samples studied.

(CHTs) and in some specific plane lands. Ethnic group

Chimtishak

Venna Pata

Muktajhuri

Roktodrone

Rakhalshosha

Figure 3 Photograph of the selected unconventional vegetable samples studied.

Scientific hypothesis

The content of total dietary fibre was evaluated in different types of leafy vegetables, non-leafy vegetables and fruits consumed by specific tribal community of Bangladesh. We presumed that there exist a significant difference with respect to total dietary fibre, measured by AOAC method, in different indigenous leafy and non-leafy vegetables, as well as fruit species.

MATERIAL AND METHODOLOGY

Reagents

Total dietary fibre assay kit (TDF-100) was purchased from Sigma-Aldrich (Saint Louis, MO, USA). Reagent grade ethanol, acetone, dibasic sodium phosphate, sodium phosphate, sodium hydroxide, hydrochloric acid was procured from Merck (Darmstadt, Germany).

Food samples

This study included analysis of total dietary fibre content for sixty-nine vegetables and fruits of ethnic and unconventional varieties grown in Chittagong Hill Tracts comprised twenty-eight leafy and seventeen non-leafy vegetables and six fruits; and unconventional group consisted of fifteen leafy and three non-leafy vegetables.

Sample plan

Multi-region sampling plan was employed for collection of the food sample. To conform to the representative sample principle- "what the mass people consume' and from where they collect it"? **(Southgate and Greenfield, 2017)**, the ethnic samples were collected from weekly local markets at Rangamati and Bandarban, and the unconventional ones were collected from the specific local areas of Gazipur, Mymansingh and from some places of Dhaka, where they were grown. The samples were collected fresh, which were then water sprayed, packed into auto seal plastic poly bags and brought to the lab where the food samples were processed for analysis of dietary fibre. Depending on the availability, two to three samples were collected for each of the food from every market and growing area. These were then mixed to make three analytes or composite test samples.

Table 1a Ethnic leafy, non-leafy vegetables and fruits tested for TDF.

SN	Local Name	English Name	Scientific Name	Family
		Leafy vegetable		
1	Simeialu pata	Cassava leaves	*Manihot esculenta* Crantz.	*Euphorbiaceae*
2	Konguloaga	unavailable	Unavailable	unavailable
3	Sineiyeshak	unavailable	Unavailable	unavailable
4	Bat baittashak	Blue commelina	*Commelina benghalensis* L.	*Commelinaceae*
5	Sakumubakla	Lawn marsh	*Hydrocotyle sibthorpiodes* L.	*Araliaceae*
6	Kamino shak	unavailable	*Caesalpinia digyna* Rottler	*Caesalpiniaceae*
7	Amsurothi	unavailable	Unavailable	unavailable
8	Noyalong	Trailing Smartweed	*Ampelygonum chinense* (L.)	*Polygonaceae*
9	Monjori	unavailable	Unavailable	unavailable
10	Yangfo	Banyan Tree	*Ficus benghalensis* L.	*Moraceae*
11	Missayanu	unavailable	*Sarcochlamys pulcherrima* Gaudich	*Urticaceae*
12	Felong dal shak	Common Bean	*Phaseolus vulgaris* L.	*Fabaceae*
13	Gaiboma	unavailable	*Polycarpon prostratum* (Forssk.)	*Caryophyllaceae*
14	Chikipung	Rosy Dock	*Rumex vesicarius* L.	*Polygonaceae*
15	Ambush	unavailable	*Blumea lacera* (Burm.f.) DC.	*Asteraceae*
16	Mrolapiong	Bitter Cassava	*Manihot esculenta* Crantz	*Euphorbiaceae*
17	Projuktipata	Arrow leaf False	*Monochoria hastata* (L.) Solms.	*Pontederiaceae*
18	Khoro pata	unavailable	*Cissus repens* Lam.	*Vitaceae*
19	Katoldingi	Arum	*Lasia spinosa* (L.) Thwaites	*Araceae*
20	Kasani	False pickerelweed	*Monochoria vaginalis* (Burm.f.)	*Pontederiaceae*
21	Saimya	Lime, Sour Lime,	*Citrus aurantiifolia* (Christm.)	*Rutaceae*
22	Balapata[uc]	Pouzolzia	*Pouzolzia hirta* (Blume) Hassk.	*Urticaceae*
23	Moroi shak	Fennel	*Foeniculum vulgare* P. Mill.	*Apiaceae*
24	Kochi aampata	Mango leaf	*Mangifera indica* L.	*Anacardiaceae*
25	Dimeypata	Bitter leaves	*Glinus oppositifolius* (L.) A.D.C	*Molluginaceae*
26	Maisapagoh	Wild coriander	*Eryngium foetidum* L.	*Apiaceae*
27	Moikhumu	Edible fern	*Diplazium esculentum* (Retz.)Sw.	*Dryopteridaceae*
28	Gondhobatali	unavailable	*Paederia foetida* L.	*Rubiaceae*
		Non-Leafy vegetable		
29	Oraibalai	unavailable	*Premna esculenta* Roxb.	*Verbenaceae*
30	Shimeful	Red cotton flower	*Bombax ceiba* L.	*Bombacaceae*
31	Sengetur/seng	unavailable	*Amomum corynostachyum* Wall.	*Zingiberaceae*
32	Betagi	Canereed	*Costus speciosus* L.	*Costaceae*
33	Bas koral	Berry bamboo	*Melocanna baccifera* (Roxb.) Kurz	*Poaceae*
34	Mairabokong	unavailable	Unavailable	unavailable
35	Laigraobokong	unavailable	Unavailable	unavailable
36	Non hong he	Turmeric	*Curcuma longa* L.	*Zingiberaceae*
37	Khirar data	Cucumber stem	*Cucumis sativus* L.	*Cucurbitaceae*
38	Pudukroi	unavailable	*Amomum aromaticum* Roxb.	*Zingiberaceae*
39	Sakdusi	Crispy brinjal	*Solanum lasiocarpum* Dunal	*Solanaceae*
40	Fala	Not known	*Alpinia nigra* (Gaertn.) B.L.Burtt	*Zingiberaceae*
41	Forashdal	Kidney been	*Vigna grahamiana* L.	*Fabaceae.*
42	Kiokokro	unavailable	Unavailable	unavailable
43	Moalu	Yam	*Dioscorea bulbifera* L.	*Dioscoreaceae*
44	Rangajhumalu	Greater/water Yam	*Dioscorea alata* L.	*Dioscoreaceae*
45	Mulachi	Radish	*Raphanus sativus* L.	*Brassicaceae*

Table 1b Ethnic leafy, non-leafy vegetables and fruits tested for TDF.

SN	Local Name	English Name	Scientific Name	Family
		Leafy vegetable		
Fruits				
46	Sindire	Oriental cantaloupe	*Cucumis melo* L.	*Cucurbitaceae*
47	Rosko	unavailable	*Syzygium balsameum* (Wight)	*Myrtaceae*
48	Kushumgulo	Bead tree	*Elaeocarpus angustifolius* Blume	*Elaeocarpaceae*
49	Jogunagula	Common red stem fig	*Ficus variegata* Blume	*Moraceae*
50	Jonglikola[uc]	Bronze banana	*Musa ornata* Roxb.	*Musaceae*
51	Jongli/Bonaam	Wild mango	*Mangifera sylvatica* Roxb.	*Anacardiaceae*

Table 2 Unconventional leafy and non-leafy vegetables tested for TDF.

SN	Local Name	English Name	Scientific Name	Family
		Leafy vegetables		
52	Chimtishak	Small knotweed	*Polygonum plebeium* R. Br.	*Polygonaceae*
53	Bon palong	Bitter dock	*Rumex maritimus* L.	*Polygonaceae*
54	Tit begun shak	Black night shade	*Solanum indicum* L.	*Solanaceae*
55	Bondhonia	Wild coriander	*Scoparia dulcis* L.	*Scrophulariaceae*
56	Vennapata	Venna leaves	*Ricinus communis* L.	*Euphorbiaceae*
57	Orohorpata	Pigeon pea	*Cajanus cajan* Millsp.	*Fabaceae*
58	Bet gach	Korok bet	*Calamus tenuis* Roxb.	*Arecaceae*
59	Sornolota/ Torulota	Dodder	*Cuscuta reflexa* Roxb.	*Cuscutaceae*
60	Sadakoroi pata	Labbec tree	*Albizia procera* (Roxb.) Benth	*Fabaceae*
61	Telakucha	Ivy gourd	*Coccinia grandis* (L.) Voigt	*C urbitaceae*
62	Tetulpata	Tamarind tree	*Tamarindus indica* L.	*Fabaceae*
63	Muktajhuri	Indian acalypha	*Acalypha indica* L.	*Euphorbiaceae*
64	Khudemanik	Thankuni leaves	*Centella asiatica* (L.) Urban	*Apiaceae*
65	Roktodrone	Red verticulia	*Leonurus sibiricus* L.	*Lamiaceae*
66	Jolpai pata	Indian olive leaves	*Elaeocarpus varunua* B.	*Elaeocarpaceae*
		Non-Leafy vegetables		
67	Rakahlshosha	Wood cumber	*Zehneria scabra* (L.f.) Sond.	*Curbitaceae*
68	Orohordal	Pigeon pea	*Cajanus cajan* (L.) Millsp.	*Fabaceae*
69	Jam alu	Potato	*Solanum tuberosum* L.	*Solanaceae*

Identification of vegetable sample

A taxonomist (Dr. Maksuda Khatun) of the Department of Botany, University of Dhaka, who was also accompanied the collection team, and confirmed the sample identity with name and family. The collected samples are listed in the Table 1a, Table 1b and Table 2. Photographs of some vegetables and fruits are also provided in the Figure 1, Figure 2 and Figure 3.

Sample processing

Each of the collected samples was cleaned with tap water and then rinsed with distilled water, gently swabbed with tissue paper to remove trace of water and air dried. The air-dried sample was diced or cut into small pieces (peeled where needed) using a clean stainless steel knife on a dried clean plastic cutting board.

The diced sample was mixed, and a weighted portion was spread in stainless steel plate(s) and then dried in air-oven at 100 – 105 ˚C to constant weight **(AOAC, 2007)**, which was then milled to 0.3 to 0.5 mm mesh powder. The powdered or milled sample was stored in desiccators for analysis of total dietary fibre.

Analysis of total dietary fibre

The total dietary fibre was estimated by the enzymatic and gravimetric method of the Association of the Official Analytical Chemists **(AOAC, 2007)** using a total dietary fibre assay kit (TDF-100A, Sigma-Aldrich, Saint Louis, USA). The assay procedure as described in the kit was strictly followed. In brief, the dried meshed sample was incubated with α-amylase at pH 6.0 for 15 min at 95 ºC for gelatinization, which was then digested by incubation with protease at pH 7.5 for 30 min at 60 ºC, then with amyloglucosidase at pH 4.5 for another 30 min at 60 ºC to remove protein and starch present in the sample. Ethanol was added in excess to precipitate the soluble dietary fibre.

The residue was filtered and washed with ethanol and acetone; which was then dried overnight in an air-oven until it reduced to constant weight or nearest 0.1 mg. After

drying, half of the sample was analyzed for protein and the other half was burnt to ash.

Total dietary fibre content in the samples was calculated according to the below mentioned formula.

$$TDF\ \% = [(R_{sample} - P_{sample} - A_{sample} - Blank)/SM] \times 100$$

Where: TDF= Total Dietary Fibres, R= average residue weight (mg), P= average protein weight (mg), A= average ash weight (mg), SM= average sample weight (mg), Blank (containing only solvent)= R_{blank}- P_{blank}-A_{blank}. Residues were corrected for protein, ash and blank in final calculation.

Statistical analysis

The analysis was carried out in triplicates. Descriptive statistics were performed and values were expressed as mean ± standard deviation. One-way analysis of variance (ANOVA) was employed to evaluate the differences among varieties for total dietary fibre content and was declared significant when p <0.05 at 5% level of significance. Minitab version 18.0. (Minitab Inc., State College, PA, USA) was used to analyze the data.

RESULTS AND DISCUSSION

Table 3 and Table 4 represent the total dietary fibre contents in the ethnic leafy and non-leafy vegetables and Table 5 and Table 6 represent the total dietary fibre contents in the ethnic fruits, and unconventional leafy and non-leafy vegetables. In the ethnic vegetables, the dietary fibre ranged from 1.02 ±0.16 to 7.16 ±0.16 g per 100 g fresh edible portion (pooled mean ±*SD*: 2.25 ±1.34) for leafy vegetables (Table 3), 0.18 ±0.01 to 6.71 ±0.49 g per 100 g fresh edible portion (pooled mean ±*SD*: 2.75 ±1.64) for non-leafy vegetables (Table 4) and in the ethnic fruits (Table 5), the content varied from 1.21 ±0.12 to 5.29 ±0.20 g per 100 g fresh edible portion (pooled mean ±*SD*: 3.11 ±1.44). Although the combined data for ethnic fruits showed high amount of dietary fibre compared to ethnic leafy- and non-leafy vegetables, but we did not observe any statistical significance. In unconventional vegetables (Table 6), the content ranged from 3.08 ±0.34 to 7.75 ±0.13 g per 100 g fresh edible portion (pooled mean ±*SD*: 5.79 ±1.42) for leafy vegetable and 1.02 ±0.06 to 8.82 ±0.40 g per 100 g fresh edible portion (pooled mean ±*SD*: 4.93 ±3.29) for non-leafy vegetable. Like ethnic vegetables and fruits combined data, unconventional vegetables also failed to show statistical significance between leafy and non-leafy vegetables.

Table 3 Total dietary fibre of ethnic leafy vegetables.

SN	Leafy vegetable (Local name)	TDF g per 100 g edible portion
1	Simei alu pata	1.02 ± 0.16^{k}
2	Konguloaga	2.07 ± 0.09^{de}
3	Sineiyeshak	2.36 ± 0.33^{d}
4	Bat baittashak	1.96 ± 0.15^{def}
5	Sakumubakla	4.06 ± 0.30^{c}
6	Kamino shak	1.87 ± 0.16^{defg}
7	Amsurothi	1.79 ± 0.22^{efgh}
8	Noyalong	1.74 ± 0.18^{efgh}
9	Monjori	1.12 ± 0.07^{ijk}
10	Yangfo	2.16 ± 0.10^{de}
11	Missayanu	5.06 ± 0.05^{b}
12	Felong dal shak	1.89 ± 0.12^{defg}
13	Gaiboma	1.97 ± 0.12^{def}
14	Chikipung	2.14 ± 0.15^{de}
15	Ambush	2.08 ± 0.16^{de}
16	Mrolapiong	2.41 ± 0.23^{d}
17	Projuktipata	1.67 ± 0.26^{efghij}
18	Khoro pata	1.18 ± 0.19^{ijk}
19	Katoldingi	1.68 ± 0.14^{efg}
20	Kasani	1.88 ± 0.10^{defghi}
21	Saimya	2.07 ± 0.05^{de}
22	Balapata	1.26 ± 0.18^{hijk}
23	Moroi shak	1.45 ± 0.17^{fghijk}
24	Kochi aampata	4.35 ± 0.33^{c}
25	Dimeypata	1.12 ± 0.02^{jk}
26	Maisapagoh	1.34 ± 0.04^{ghijk}
27	Moikhumu	2.09 ± 0.10^{de}
28	Gondhobatali	7.16 ± 0.16^{a}

Note: Different superscript letters in each column indicates the significant differences in the mean at p <0.05.

Table 4 Total dietary fibre of ethnic non-leafy vegetables.

SI	Non-Leafy vegetable (Local name)	TDF g per 100 g edible portion
29	Oraibalai	6.71 ±0.49^{a}
30	Shimeful	4.90 ±0.24^{b}
31	Sengetur/senga	1.70 ±0.02^{fgh}
32	Betagi	4.37 ±0.34^{b}
33	Bas koral	2.19 ±0.14^{defg}
34	Mairabokong	0.18 ±0.01^{j}
35	Laigraobokong	1.27 ±0.26^{hi}
36	Non hong he	2.98 ±0.05^{cd}
37	Khirar data	2.13 ±0.02^{efg}
38	Pudukroi	3.44 ±0.25^{c}
39	Sakdusi	2.51 ±0.47^{def}
40	Fala	2.41 ±0.32^{defg}
41	Forashdal	2.63 ±0.42^{cde}
42	Kiokokro	0.74 ±0.12^{ij}
43	Moalu	2.28 ±0.37^{defg}
44	Ranga jhum alu	1.65 ±0.13^{gh}
45	Mulachi	4.74 ±0.23^{b}

Note: Different superscript letters in each column indicates the significant differences in the mean at p <0.05.

Table 5 Total dietary fibre of ethnic fruits.

SI	Fruits (Local name)	TDF g per 100 g edible portion
46	Sindire	1.94 ±0.13^{d}
47	Rosko	4.38 ±0.46^{b}
48	Kushumgulo	1.21 ±0.12^{e}
49	Jogunagula	2.78 ±0.21^{c}
50	Jonglikola	3.06 ±0.09^{c}
51	Jongli/Bonaam	5.29 ±0.20^{a}

Note: Different superscript letters in each column indicates the significant differences in the mean at p <0.05.

Table 6 Total dietary fibre of unconventional vegetables.

SI	Leafy vegetables (Local name)	TDF g per 100 g edible portion
52	Chimtishak	7.75 ±0.13^{ab}
53	Bon palong	4.69 ±0.33^{h}
54	Tit begun shak	4.65 ±0.13^{h}
55	Bondhonia	6.27±0.33^{def}
56	Vennapata	4.49 ±0.38^{h}
57	Orohorpata	6.64 ±0.25^{cdef}
58	Bet gach	7.16 ±0.41^{bcd}
59	Sornolota/ Torulota	6.12 ±0.36^{ef}
60	Sadakoroi pata	3.08 ±0.34^{i}
61	Telakucha	7.32 ±0.34^{bc}
62	Tetulpata	6.29 ±0.16^{def}
63	Muktajhuri	6.85 ±0.46^{bcde}
64	Khudemanik	3.33 ±0.29^{i}
65	Roktodrone	6.56 ±0.11^{cdef}
66	Jolpai pata	5.74 ±0.06^{fg}
	Non-Leafy vegetables	
67	Rakahlshosha	1.02 ±0.06^{j}
68	Orohordal	8.82 ±0.40^{a}
69	Jam alu	5.19 ±0.22^{gh}

Note: Different superscript letters in each column indicates the significant differences in the mean at p <0.05.

The present study indicates that amongst the vegetables and fruits those were tested, Orohordal contains the highest amount of total dietary fibre (8.82 ±0.40 g per 100 g fresh edible portion).

It was followed by Chimtishak, Telakucha, Betgach, Gondhobatali, Muktajhuri, Orhorpata, Oraibalai, Roktodrone, Tetulpata, Bondhonia, Sornolota, which also contain rich amount of dietary fibre ranging from 7.75 ±0.13 to 6.12 ±0.36 g per 100 g fresh edible portion. The other vegetables such as Jolpaipata, Jonglaam, Jamalu, Missayanu, Shimeful, Mulachi, Bonpalong, Titbegun, Vennapata, Rosko, Betagi, Kochi aampata, Sakumubakla also contain a high amount of TDF (5.74 ±0.06 to 4.06 ±0.30 g per 100 g fresh edible portion). For leafy vegetable, the lowest TDF was present in Simeialupata (1.02 ±0.16 g per 100 g fresh edible portion). Among the fruits, Jongliaam or Bonaam has the highest amount of TDF (5.29 ±0.20 g per 100 g fresh edible portion), followed by Rosko (4.38 ±0.46 g per 100 g fresh edible portion) and Jonglikola (3.06 ±0.09 g per 100 g fresh edible portion).

The study findings also indicate that the unconventional vegetables contain higher amount of total dietary fibre (5.65 ±1.85 g per 100 g fresh edible portion) as compared to the ethnic vegetables (2.52 ±1.48 g per 100 g fresh edible portion). In case of most food items, the content of dietary fibre in ethnic vegetables was found to be, somewhat, comparable to that of commonly consumed vegetables in Bangladesh **(Islam et al., 2010; Islam et al., 2012; Shaheen et al., 2014; Alam et al., 2016; Rana et al., 2019**) as well as in India **(Longvah et al., 2017)** and elsewhere **(Dhingra et al., 2012)**. From Table 5 it can be seen that, among ethnic fruits, Rosko, which looks like Plum or Black berry, was found to contain much higher amount of dietary fibre (4.38 g per 100 g edible fresh) than the Plum (2.80 g per 100 g edible fresh) or higher than or similar to the Black berry (3.50 or 4.35 g per 100 g fresh edible portion) **(Islam et al., 2012; Longvah et al., 2017)**.

Similarly, Jongliaam and Joglikola were found to contain higher amount of dietary fibre (5.29 and 3.06 g per 100 g fresh edible portion respectively) as compared to the mango (3.65 or 1.5 g per 100 g fresh edible portion) and banana (1.90 or 2.6 g per 100 g fresh edible portion) **(Islam et al., 2010; Islam et al., 2012; Shaheen et al., 2014)**.

In the ethnic Mulachi and Green Chilli, the total dietary fibre was found to be almost same (4.74 vs 4.90 g per 100 g fresh edible portion). The recommended dietary intake (RDI) of TDF for an adult human is 30 – 38 g per day and the consumption of these ethnic and unconventional vegetables and fruits can contribute up to 30% of RDI of TDF.

CONCLUSION

Some of ethnic vegetable and fruits such as Gondhobatali, Oraibalai, Shimeful, Rosko, Betagi, Kochi aampata, Jongliaam and most of the unconventional vegetables were found to contain rich amount of total dietary fibre. The findings of present study would encourage people to adapt dietary diversity. Cultivation and regular intake of plant foods rich in fibre might reduce the risk of many diseases. It would also go a long way in filling up the data gap that exists in food composition database for Bangladesh.

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