

14. Ready to Serve Meals Based on Millets

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14.1 Introduction:

Millets are traditional grains, grown and consumed in the Indian subcontinent from the past more than 5000 years. Millets are small - grained, annual, warm - weather cereals belonging to grass family. They are highly tolerant to drought and other extreme weather conditions. They are rain - fed, hardy grains which have low requirements of water and fertility when compared to other popular cereals.

Millets are highly nutritious, non-glutinous and non-acid forming foods. Millets act as a probiotic feeding for micro - flora in our inner ecosystem. Millets have many nutraceutical and health promoting properties especially the high fibre content.

Millets hydrate our colon to keep us from being constipated. Millets contain major and minor nutrients in good amount along with dietary fibre. Niacin in millet can help lower cholesterol. Millets are gluten free and can be a substitute for wheat or gluten containing grains for celiac patients.

Millets are high in nutrition and dietary fibre. They serve as good source of protein, micronutrients and phytochemicals. The millets contain 7-12% protein, 2-5% fat, 65-75% carbohydrates and 15-20% dietary fibre. The essential amino acid profile of the millet protein is better than various cereals such as maize. Millets contain fewer cross-linked prolamins, which may be an additional factor contributing to higher digestibility of the millet proteins.

Similar to cereal proteins, the millet proteins are poor sources of lysine, but they complement well with lysine - rich vegetables (leguminous) and animal proteins which form nutritionally balanced composites of high biological value. Millets are more nutritious compared to fine cereals. Small millets are good source of phosphorous and iron.

Millets contribute to antioxidant activity with phytates, polyphenols, tannins, anthocyanins, phytosterols and pinacosanols present in it having important role in aging and metabolic diseases. All millets possess high antioxidant activities.

Table 14.1: Nutritional Value of Various Millets

Milletes	Moisture (g)	Protein (g)	Total Fat (g)	Dietary Fibre (g)	Carbohydrates (g)	Energy (KJ)	Calcium (mg)	Copper (mg)	Iron (mg)
Bajra (<i>Pennisetum glaucum</i>)	8.97 ± 0.60	10.96 ± 0.26	5.43 ± 0.64	11.49 ± 0.62	61.78 ± 0.85	1456 ± 18	27.35 ± 2.16	0.54 ± 0.11	6.42 ± 1.04
Sorghum (<i>Sorghum vulgare</i>)	9.01 ± 0.77	9.97 ± 0.43	1.73 ± 0.31	10.22 ± 0.49	67.68 ± 1.03	1398 ± 13	27.60 ± 3.71	0.45 ± 0.11	3.95 ± 0.94
Ragi (<i>Eleusine coracana</i>)	10.89 ± 0.61	7.16 ± 0.63	1.92 ± 0.14	11.18 ± 1.14	66.82 ± 0.73	1342 ± 10	364 ± 58	0.67 ± 0.22	4.62 ± 0.36
Little millet (<i>Panicum sumatrense</i>)	14.23 ± 0.45	8.92 ± 1.09	2.55 ± 0.13	6.39 ± 0.60	65.55 ± 1.29	1449 ± 19	16.06 ± 154	0.34 ± 0.08	1.26 ± 0.44
Kodo millet (<i>Paspalum scrobiculatum</i>)	14.23 ± 0.45	8.92 ± 1.09	2.55 ± 0.13	6.39 ± 0.60	66.19 ± 1.19	1388 ± 10	15.27 ± 1.28	0.26 ± 0.05	2.34 ± 0.46
Foxtail millet (<i>Setaria italica</i>)	-	12.30	4.30	-	60.09	331	-	1.40	-
Barnyard millet (<i>Echinochloa esculenta</i>)	-	6.20	2.20	-	65.55	307	-	0.60	-
Proso millet (<i>Panicum miliaceum</i>)	-	12.50	1.10	-	70.04	341	-	1.60	-

Source: Indian Food Composition Tables, National Institute of Nutrition Non-Insulin Dependent Diabetes – 2017

Millets are high in nutrition and dietary fibre. They serve as good source of protein, micronutrients and phytochemicals (Table 14.1). Number of the food items can be made from millets and we have to must use such millets in our daily life for the healthy life.

Here we are put out some important food recipes below which are generally used by the people in their daily life and easy to make at the home with the locally available ingredients.

14.2 Finger Millet Soup:

Ingredients: Finger millet flour: 1 cup, Water: 5 cups, Jaggery: 1 Cup, Saunf: 1 tea spoon, Peanuts: 100 g

Preparation: Take water in a vessel and boil it. Add jaggery and wait till it melts completely. Drain it and boil it again. Roast peanuts and remove the skin. Cut them into small pieces and keep it aside. Mix the Finger millet flour in little amount of cold water to avoid lumps formation, add this to the jaggery water, boil it until it thickens and add peanut pieces. You can also add milk and drink.

14.3 Ragi Porridge:

Ingredients: Finger millet flour – 3 tea spoons, Jiggery – 10 g, Water – 100 ml, Milk – as per required

Preparation: Add 3 tea spoon flour to pan with 100 ml water, to make porridge. Melt the jiggery with the help of water. Add after filter to the pan. Cook till it reaches a semi thick consistency. Cool and then mix formula milk as needed.

14.4 Sorghum Masala Roti:

Ingredients: Sorghum Flour: 1000 g, Salt: as required, Green Chillies: 10 g, Spinach: 250 g, Water: as required, Sesame seeds: 50 g

Preparation: Take finely chopped spinach leaves, green chillies, and make a paste, add salt and keep it aside. To Sorghum flour, add masala paste and water, make it like chapatti dough. Take small portion of the dough, roll like Roti with hands. Press sesame seeds on Roti. Roast on high flame.

Note: The process for all the varieties of roties like pearl millet roti, little millet roti, finger millet roti is the same.

14.5 Finger Millet Papad:

Ingredients: Finger millet flour: 1000 g, Water: 6 lit, Baking soda: 1 g, Salt: 20 g, Coriander leaves: 250 g, Cumin: 10 g

Preparation: Take a large vessel add water wait until the water boils. Now add sieved finger millet flour already mixed in cool water as to avoid lumps and cook until it comes to boil.

Add required amounts of salt, baking soda and cumin and cook until raw flavour disappears. Now add the coriander paste and finely chopped leaves to the boiling liquid and wait till raw smell disappears, as the liquid thickens off the stove. Now take a spoon and pour on a piece of cloth wait until dried and pack for further use.

Precautions: The flour must be sieved before use. The flour must be mixed in cool water before pouring as to avoid lumps.

Shelf Life: Shelf life of this product is best before 1 year.

14.6 Finger Millet Crunchies:

Ingredients: Finger millet flakes – 50 g, Pearl millet flour – 10 g, Desiccated coconut powder – 25 g, rose syrup – 30 ml, Refined Wheat flour – 25 g, Sugar – 25 g, Butter – 70 g

Preparation: Mix sugar to the melted butter and keep it aside. Take finger millet flakes, refined wheat flour, coconut powder and rose syrup in a bowl.

Add sugar and butter and mix it. Press the dough uniformly in baking tray. Now bake them in oven at 190 °C for 20 minutes. After cooling cut them into square shape.

14.7 Fox Tail Millet Snickers:

Ingredients: Fox tail millet flour – 50 g, Wheat flour – 50 g, Salt -1 g, Baking powder – 3 g, Sugar – 20 g, Butter – 30 g, Vanilla – 5 ml, Oil – for deep frying, Egg – 1 No.

Preparation: Whisk butter and sugar until it becomes light and fluffy. To this, add salt, baking powder, vanilla essence and add egg and blend it.

Add foxtail millet flour to it and knead into a dough. Flatten the dough into thick layer and cut it into cookie shape. Deep fry the cookie until they become golden brown and serve it.

14.8 Finger Millet Chakri:

Ingredients: Finger millet flour – 250 g, Gram flour – 150 g, Salt – 5 g, Oil – 20 ml, Ginger – 5 g, Garlic paste – 2 g

Preparation: Mix Finger millet flour and gram flour and then add water and oil and kneed it very well. Make two balls from whole mixture. Put that single ball in chakri making machine.

Then make the chakri by pressing the machine and bake it in a preheated oven at 180 °C for 7 minutes. Serve the chakri after cool it.

14.9 Finger Millet Chocolate Cake:

Ingredients: Finger millet flour – 66 g, Sugar powder – 80 g, Cocoa powder – 42 g, Salt – 2 g, Milk – 72 ml, Oil – 72 ml, Baking powder – 10 g, Dark chocolate – 50 g, Eggs – 2 Nos.

Preparation: Beat egg and sugar powder until it becomes fluffy, then add milk and milk and blend it for 5 minutes; Add oil and repeat the blending step.

Add Finger millet flour, cocoa powder, baking powder to the above mixture and prepare batter until it becomes light and fluffy. In a greased cake pan, pour the batter and bake at 180 °C for 30 minutes. Remove the cake from the oven and let it cool for some time. After cooling, cover the cake with melted chocolate and freeze it for 5 minutes. Chocolate cake is ready to eat.

14.10 Finger Millet Candy:

Ingredients: Finger millet flour- 30 g, Condense milk- 100 g, Sugar balls- 2 g, Cocoa powder- 20 g, Butter- 10 g

Preparation: Melt the condensed milk. Now add the finger millet flour, cocoa powder to the condensed milk and cook until it becomes solid consistency and kept aside for cooling. Grease your hands with butter. Make balls of above mixture with the help of spoon. Finally decorate the candies with sugar balls and keep them in muffin covers. Finger millet candy is ready to serve.

14.11 Finger Millet Hot Chocolate:

Ingredients: Finger millet flour: 40 g, Chopped dark chocolate: 30 g, Sugar: 10 g, Milk: 150 ml, Cocoa powder: 10 g, Corn flour: 10 g

Preparation: Place the milk into saucepan over medium flame. Whisk in cocoa powder, coconut, sugar, corn flour, finger millet flour and stir continuously until the lumps disappear. Cook it on a low flame. Once the milk is warm, add dark chocolate and whisk for 10 minutes. Serve the finger millet hot chocolate in glasses, topped with your favourite garnishes.

14.12 Sorghum Honey Cake:

Ingredients: Sorghum flour – 250 g, Butter – 50 g, Hydrogenated fat – 50 g, Fresh cream – 120 g, Baking soda – 3 g, Powdered sugar – 75 g, Honey – 40 ml, Vanilla essence – 5 ml

Preparation: Beat eggs and powdered sugar in bowl; to this add butter and honey and allow melting double boiling method. Add sorghum flour and baking powder to this above mixture and prepare a dough. Divide the dough into equal balls and roll it out.

Dock the dough sheet using fork and bake it in a preheated oven at 180 °C for 7 minutes. In planetary mixer, add fresh cream, sugar powder, vanilla essence, hydrogenated fat and mix until it becomes light and fluffy. Layer the flattened dough one over the other with cream mixture in between. Sorghum honey cake is ready.

14.13 Little Millet Burfee:

Ingredients: Little millet gruel – 60 ml, Milk mist cream – 60 g, Almond powder – 10 g, White sugar powder – 35 g, Milk powder – 60 g, Cardamom powder – 1 g, Almond mix powder – 2 g, Ghee – as required, Sugar crystal for garnishing.

Preparation: Add milk mist cream and gruel, cook it well until it turns into a thick paste. Add milk powder, cardamom powder, almond powder, powdered sugar, almond mix powder into that paste, mix them well; continue to cook on low flame until the mixture turns silky smooth consistency.

Grease the tray with ghee and spread the prepared mixture by pressing it evenly; cut into square shape. Sprinkle sugar crystals over it to garnish. Refrigerate for 2 hours and serve it.

14.14 Finger Millet Brownie:

Ingredients: Finger millet flour – 80 g, White butter- 100 g, Cocoa powder- 40 g, Powder sugar- 250 g, Dark chocolate- 50 g Egg – 2 Nos, Walnut- 50 g

Preparation: Preheat the oven at 170 °C. Melt the chocolate with butter on the double boiler. Mix sugar, cocoa powder and egg together. Take the chocolate mixture off the boiler and allow it to cool. Mix it with egg mixture and fold flour. Add chopped walnut (half quantity) into the batter. Pour the batter in the lined mould. Top with remaining walnut. Bake it for 40-45 Minutes.

14.15 Finger Millet Laddu:

Ingredients: Finger millet flour: 100 g, Ghee: 25 g, Jaggery (Grated): 100 g, Cardamom: 3 g, Water: as required

Preparation: Fry finger millet flour in ghee, boil water with jaggery to set syrup, add finger millet flour, elachi powder and make them into small balls (laddus).

14.16 Ragi Sunnunda:

Ingredients: Finger millet Flour: 500 g, Jaggery: 1000 g, Black gram: 500 g, Ghee: 400 g

Preparation: Roast Finger millet and black gram until they are lightly brown in colour in a pan without oil. Grind them together into flour. Powder the Jaggery and add it to the flour. Add the heated ghee to the powder and make them into small balls (laddus). This is very helpful for children who are suffering with malnutrition.

14.17 Ragi, Carrot & Cinnamon Muffin:

Ingredients: Finger millet flour: 400 g, Safflower Oil: 100 ml, Carrot grated: 15 g, Eggs: 2 No., Jaggery powder: 300 g, Cinnamon powder: 5 g, Milk: 100 ml.

Preparation: Preheat oven to 180 °c - grease twelve cup capacity muffins holes. Chop carrot and grate. Sieve finger millet flour into a bowl. Combine oil, egg and milk in a mixer, mix well. Now add jaggery powder and then sieved flour. Stir gently until almost combined. Add grated carrot and cinnamon, put mixture into muffin holes. Bake for about 15 minutes or until a knife/stick inserted into the centre comes out clean. Store in a cool place.

14.18 Sorghum Laddu:

Ingredients: Sorghum Flour :500 g, Wheat Ravva: 250 g, Sugar: 1000 g, Coconut Powder: 250 g, Badam: 100 g, Ghee: 50 g, Cardamom Powder: 3 g, Milk: 200 ml

Preparation: Roast Sorghum flour, coconut powder, ravva separately with ghee. Make sugar into powder, heat milk and keep a side. Take a big vessel; add fried jowar flour, ravva, coconut powder, sugar powder and cardamom powder. Mix all together, by adding required amounts of milk and make them into small balls (laddus) and decorate with roasted badam nuts.

14.19 Sorghum Barfi:

Ingredients: Sorghum flour: 1000 g, Ghee: 50g, Sugar: 1000 g, Water: as required

Preparation: Sieve Sorghum flour and fry with ghee. Prepare sugar syrup (Single thread consistency) with water. Add fried jowar flour to sugar syrup. Stir continuously to avoid lump formation. Add ghee while stirring; cook till product leaves from the sides of the vessel. Remove from the stove; pour in greased plate, cut into desired shapes.

Note: Shelf life of this product is four months. On all festivals and special occasions these burphies are prepared as sweet dish.

14.20 Sorghum Mysoor Pak:

Ingredients: Sorghum flour: 100 g, Ghee: 300 g, Sugar: 100 g, Water: 100 ml

Preparation: Fry Sorghum flour in little ghee and keep it aside. Prepare sugar syrup in a separate vessel (Single thread consistency).

Add Jowar flour to the syrup. Keep stirring the batter without forming lumps by adding ghee little by little until the whole ghee finishes. Pour it into a plate with ghee applied to it and cut it into small pieces.

14.21 Finger Millet Peanut Butter Cookies:

Ingredients: Finger millet flour – 90 g, Peanut butter – 60 g, refined wheat flour – 50 g, Sugar – 40 g, Eggs – 1 No., Salt – 1 g, Baking powder – 2 g, Vanilla essence – 3 ml, Crushed peanuts – 30 g for topping

Preparation: Combine the Finger millet flour, refined wheat flour, sugar, salt, peanut butter and mix well. Whisk the eggs separately and add to the above flour mixture. Add baking powder, vanilla essence and mix well to form the cookie dough. Roll out the dough and cut with cookie cutter. Coat them with crushed peanuts. Bake them at 180 °C for 25-30 minutes. Serve the cookies.

14.22 Finger Millet Cookies:

Ingredients: Finger millet flour – 120 g, Baking powder - ¼ tea spoon, Baking soda – 1/8 tea spoon, Besan – 80 g, Ghee – 120 g, Fine sugar -100 g, Cardamom powder – ½ tea spoon, Pista – for topping

Preparation: Preheat the oven at 200 °C. Melt the ghee and mix with fine sugar. Mix all the ingredients together. Incorporate dry ingredients into ghee mixture and make a soft dough. Divide it into small pieces of 12-15 g each Roll over the chopped pistachio. Place them on the baking tray. Bake them for 15 min.

Note: The process for all the varieties of cookies like Pearl millet cookies, sorghum cookies are the same.

14.23 Sorghum Biscuits:

Ingredients: Sorghum flour: 750 g, Dalda/ butter: 250 g, Refined flour (Maida): 250 g, Sugar: 500 g, Salt: 1 tea spoon, Baking soda: ½ tea spoon, Baking powder: ½ tea spoon, Water: sufficient for mixing

Preparation: Mix sorghum flour, salt, baking powder, baking soda, refined flour and sieve it. Add sugar powder to butter and beat well. While beating add the flour mixture slowly and mix well. Finally add some water to make it into dough. Press the dough with a roller and cut biscuit of required size and shape. Bake these biscuits in oven for 10 minutes at 200 centigrade.

Note: Same biscuits can be made with finger millet flour.

14.24 Foxtail Millet Masala Idli

Ingredients: Foxtail Millet 1000 g, Black gram: 250 g, Idly Ravva: 250 g, Edible soda: 5 g, Salt: as required, Oil: 2 ml, Cumin: 5 g, Bengal gram: 10 g, Carrot: 100 g, Green Chillies: 2 nos

Preparation: Soak Foxtail millet and Black gram dhal for about 5-6 hours in water. Grind these into smooth batter. Add idly ravva, edible soda and keep it overnight. Heat oil in a vessel, add cumin, Bengal gram, green chillies and carrot along with salt and cook. Add this seasoning to idly batter. Apply oil to the idly mould and place the mixture in moulds. Steam it for 10 minutes.

Note: Process for all the varieties of idlies like foxtail millet idly, little millet idly, finger millet idly is the same.

14.25 Foxtail Millet Onion Vada

Ingredients: Foxtail Millet: 1000 g, Black gram: 250 g, Baking soda: 5 g, Oil: 500 ml, Green Chillies: 10 g, Onion: 20 g

Preparation: Soak foxtail millet and black gram for 5-6 hours in water; grind it into a thick batter. Add little salt, green chillies, onion and baking soda to the batter. Heat oil in pan and make the batter into small vada and deep fry until they turn golden brown.

Note: Little millet and finger millet vada can also be prepared in the same way.

14.26 Foxtail Millet Upma:

Ingredients: Foxtail millet Ravva: 500 g, Oil: 50 g, Cumin and Mustard seeds: 5 grams, Green chillies: 10 g, Bengal gram: 50 g, Peanuts: 50 g, Curry Leaves: 1 bunch, Water: 1 Litre.

Preparation: Heat oil in a pan, add mustard, cumin seeds and fry for a while, now add groundnuts and bengal gram, fry them, add curry leaves, green chillies, onion and fry them all until they turn to brown. Add water and let it boil. To the boiling water add the ravva and cook on low flame until the ravva is cooked. Serve hot.

14.27 Foxtail Millet Dhosa:

Ingredients: Foxtail millet: 500 g, Blackgram dal: 250 g, Bengal gram dal: 10 g, Fenugreek seeds: 1 g, Oil: 250 ml, Salt: as required

Preparation: Clean black gram dhal and Bengal gram dhal. Soak in water for 4 hours separately. Soak foxtail millet in water for four hours with fenugreek seeds. Grind the dhals and the foxtail millet separately to fine batter. Mix all into a smooth batter, add salt and leave it to ferment overnight. Next day mix batter by adding water, just enough to get dhosa batter consistency. Heat a pan, smear a little oil, and spread a large scoop of batter on it evenly to make the dhosa. Serve hot with any pickle or chutney.

Note: Little Millet and finger millet dhosa can also be prepared in the same way. For mixed millet dhosa add all millets *i.e.* foxtail, finger millets, little millets and bajra to this recipe, remaining ingredients remain same.

14.28 Ragi Malt:

Ingredients: Ragi: 1000 g, Green gram: 500 g, Jowar: 500 g

Preparation: Wash and soak separately Ragi, Green gram and Jowar for 12 hours. Take clean cloth and put the grams in it and tie them, hang the cloth for two days until the grains are sprouted. (Please check them and sprinkle some water so that they sprout). The sprout has to be ½ inch long. Once this is done put them in a bowl and wash them until the sprouts are separated from the grains and dry them for two days. Take a pan and without oil fry the grains and grind them into powder.