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Scaling up Small Millet Post-harvest and Nutritious Food Products Project

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## TECHNICAL BULLETIN ON VALUE ADDED PRODUCTS FROM SMALL MILLETS

Small Millets are one of the oldest food grains known to mankind and possibly the first cereal grain used for domestic purposes. In fact, while it is often called as grain because of grain-like consistency, *millet is actually a seed*. For centuries, Small Millets have been a prized crop in India, used in everything from traditional recipes to snacks and as cereal grain. They can adapt themselves to marginal soils and varied environmental conditions. Small Millets are staple diet for nearly 1/3<sup>rd</sup> of the world's population. Small Millets are small, round in shape and are white, grey, yellow or red in colour. They are most commonly available in the form of pearled and hulled kind. Small Millets are tasty grains that have a mildly sweet, nut-like flavour. Small Millets are thus an amazing grain offering great opportunities for diversified utilization and value addition. These Small Millets have diversified uses and high food value but the consumption of these Small Millets has declined for want of standardized processing techniques to compete with fine cereals. Hence utilization of small Millets in popular foods would find ready acceptability with the tag of 'health foods'.

Small Millets have immense health benefits. They are good sources of protein, dietary fiber, energy and minerals when compared to rice. The high protein content provides several nutritional and physiological benefits. Grain has promising quantity of essential amino acids such as tryptophan, cystine, methionine with high biological value crucial to health and growth. The low fat and high fibre content helps in preventing obesity, reduces transit time and prevents constipation. The tiny "grain" is gluten-free and packed with vitamins and minerals. Small Millets are rich sources of nutrients which our body needs, such as magnesium, calcium, manganese, phosphorus, iron and antioxidants. Small Millets are considered as low glycemic index foods, which are helpful for diabetics. Small Millets in addition to nutritional benefits are rich in phyto chemicals, including phytic acid, which is believed to lower cholesterol and phytate, which is associated with cancer risk. Dietary fiber protects against hyperglycemia, phytates against oxidation stress by chelating iron involved in Fenton's reaction, and some phenolics and tannins act as antioxidants. They are also valued for natural antioxidants and are gaining importance as complete nutrient source. Small Millets can be used for the preparation of traditional recipes, pasta products, puffed foods, bakery products and instant food mixes.

#### NUTRITIVE VALUE OF SMALL MILLETS (g/100g)

S.No.	Small Millets	Protein (g)	Fat (g)	CHO (g)	Energy (Kcal)	Calcium (mg)	Phosphorous (mg)	Iron (mg)	Carotene (µg)	Thiamine (mg)	Riboflavin (mg)
1.	Pearl millet	11.6	5.0	67.5	361.0	42.0	296.0	8.0	132.0	0.33	0.25
2.	Sorghum	10.4	1.9	72.6	349.0	25.0	222.0	4.1	47.0	0.37	0.13
3.	Finger millet	7.3	1.3	72.0	328.0	344.0	283.0	3.9	42.0	0.42	0.19
4.	Little millet	7.7	4.7	67.0	34.10	17.0	220.0	9.3	0	0.30	0.09
5.	Kodo millet	8.3	1.4	65.9	309.0	27.0	188.0	0.5	0	0.33	0.09
6.	Foxtail millet	12.3	4.3	60.9	331.0	31.0	290.0	2.8	32.0	0.59	0.11
7.	Proso millet	12.5	1.1	70.4	341.0	14.0	206.0	0.8	0	0.20	0.18
8.	Barnyard millet	6.2	2.2	65.5	307.0	-	0.33	0.10	82	-	- 1

## I. BREAKFAST RECIPES FROM SMALL MILLETS

#### 1. IDLI

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice -730 gBlack gram dhal -250 gFenugreek seeds -20 g

Salt - as required

#### Method

Soak millet rice and black gram dhal separately for 4 hours and grind coarsely.

❖ Add salt, mix it evenly and allow it to ferment overnight.

❖ Pour batter into idli plates and steam cook for 10-15 minutes.

Serve hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	68.96	11.02	1.40	3.12	3.93	302.32	305.14
Kodo millet	63.89	12.6	1.49	6.94	1.45	61.40	241.00
Little millet	65.06	11.32	4.05	6.24	8.14	13.44	211.92
Barnyard millet	63.10	11.1	2.08	7.52	4.73	56.30	307.00

#### 2. DOSA

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice - 730 g

Black gram dhal - 250 g

Fenugreek seeds - 20 g

Salt - as required

#### Method

Soak small millet rice and black gram dhal separately for 4 hours and grind into fine batter.

- ❖ Add salt, mix it evenly and allow it to ferment overnight.
- ❖ Heat the tawa and grease with oil or ghee.
- Spread one scoop of batter evenly on the tawa and cook both sides.
- Serve hot with chutney / sambar.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	68.96	11.02	1.40	3.12	3.93	302.32	305.14
Kodo millet	63.89	12.6	1.49	6.94	1.45	61.40	241.00
Little millet	65.06	11.32	4.05	6.24	8.14	13.44	211.92
Barnyard millet	63.10	11.1	2.08	7.52	4.73	56.30	307.00

#### 3. PANIYARAM

## **Ingredients**

Finger millet/ kodo millet/

- 450 g
- 200 g
- 20 g
- 150 g
- 40 g
- 20 g
- 20 g
- 100 ml
- as required

#### Method

- ❖ Soak millet rice, black gram dhal and fenugreek seed separately for 4 hours and grind into the fine batter.
- ❖ Add salt and allow it to ferment overnight.
- ❖ Add all the ingredients (chopped onion and chillies) and mix thoroughly.
- ❖ Apply oil to the paniyaram mould and pour the batter.
- Cook both sides and serve hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	52.36	8.52	3.67	3.57	2.43	154.50	198.60
Kodo millet	54.30	9.50	1.20	4.30	1.98	55.00	200.30
Little millet	45.39	8.99	1.57	5.46	3.75	14.40	233.00
Barnyard millet	51.50	8.23	2.85	3.41	2.82	27.50	183.50

#### 4. IDIAPPAM

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour - 500 g

Sugar - 250 g
Coconut milk - 250 ml
Salt - 10 g

Water - as required

#### Method

❖ Steam the Small millet flour for five minutes.

❖ Blend steamed flour with salt and water thoroughly.

❖ Extrude the dough using idiappam machine and steam for 20-25 minutes

Serve hot with coconut milk and sugar.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	72.00	7.30	1.30	3.60	3.90	344.00	283.00
Kodo millet	60.80	5.03	11.00	4.50	0.69	20.30	129.00
Little millet	67.00	7.00	4.70	7.60	9.30	17.13	215.12
Barnyard millet	60.58	3.98	1.14	4.90	2.94	16.75	175.00

#### 5. ROTTI

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour - 400 g Raw rice flour - 200 g Onion (chopped) - 150 g - 70 g Green chilies (chopped) Asafoetida - 30 g - 30 g Cumin seeds Curry leaves - 20 g - 100 ml Oil Salt - 20 g Water

- as required

#### Method

- ❖ Mix Small millet flour and rice flour thoroughly.
- ❖ Add other ingredients with required amount of water and knead to a thick dough consistency.
- ❖ Flatten the dough on pre-heated tawa and cook with oil.
- Serve it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	51.04	5.59	1.01	2.93	3.37	251.45	209.93
Kodo millet	47.50	5.96	11.20	4.80	2.38	90.60	139.70
Little millet	47.79	5.85	3.22	5.53	6.88	16.14	214.89
Barnyard millet	23.40	5.12	11.50	5.12	4.18	17.80	176.50

#### 6. PUTTU

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour -600 gJaggery -200 gShredded coconut -200 gSalt -20 g

#### Method

- ❖ Add required amount of water and salt to Small millet flour and mix it thoroughly without lumps.
- ❖ Steam the flour for 20-25 minutes.
- ❖ Add sugar and shredded coconut.
- Serve it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	70.21	5.93	5.13	3.06	3.11	260.80	236.40
Kodo millet	61.14	5.96	9.18	6.12	1.14	34.20	169.00
Little millet	66.46	6.23	7.66	6.06	7.16	15.55	215.05
Barnyard millet	60.90	4.70	9.66	6.60	3.84	16.63	224.00

#### 7. UPPMA

#### **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rava - 600 g Onion (chopped) - 200 g Green chilies (chopped) - 50 g Oil - 80 ml Curry leaves - 20 g Mustard seed - 10 g - 20 g Black gram dhal Bengal gram dhal - 20 g

Water - as required Salt - as required

#### Method

- ❖ Grind millet rice into grits (rava).
- \* Roast the rava till it becomes light brown.
- ❖ Fry all the ingredients except rava with oil.
- ❖ Add water, salt and allow it to boil.
- ❖ Add roasted rava slowly with continuous stirring.
- ❖ Cook it for 15-20 minutes.
- Serve hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	56.78	9.22	1.52	2.70	3.55	245.14	275.58
Kodo millet	45.40	6.91	8.84	6.07	3.13	56.30	158.00
Little millet	53.78	9.46	3.57	5.10	6.79	18.94	216.10
Barnyard millet	45.20	5.65	9.32	6.55	3.83	18.54	213.00

#### **8. ADAI**

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice - 400 g Red gram dhal - 150 g Green gram dhal - 100 g Parboiled rice - 100 g Chili powder -30 g Cumin seeds - 30 g Asafoetida - 20 g - 20 g Curry leaves Oil - 150 ml Salt - as required

#### Method

- Soak millet rice, red gram dhal, black gram dhal and parboiled rice for 2 hours.
- Grind the soaked materials into coarse batter.
- ❖ Add red chilli powder, asafoetida, curry leaves, cumin seeds and salt to the batter and mix it thoroughly.
- ❖ Apply oil on the tawa, spread the adai batter and cook.
- **Serve** hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	67.07	13.50	1.97	2.56	4.08	253.30	315.30
Kodo millet	62.25	13.10	1.90	6.35	2.58	63.00	243.00
Little millet	64.07	13.74	4.01	4.96	12.90	12.10	160.15
Barnyard millet	62.05	12.00	2.30	6.75	4.83	80.24	289.00

#### 9. KITCHADI

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rava - 500 g -50g Carrot Beans - 50g Onion (chopped) - 200 g Green chilies (chopped) - 50 g Oil - 80 ml Curry leaves - 20 g Mustard seed - 10 g - 20 g Black gram dhal Bengal gram dhal - 20 g

Water - as required Salt - as required

#### Method

- Grind Small millet rice into grits (rava).
- \* Roast the rava till it becomes light brown.
- ❖ Fry all the ingredients except rava with oil.
- ❖ Add water, salt and allow it to boil.
- ❖ Add roasted rava slowly with continuous stirring.
- ❖ Cook it for 15-20 minutes.
- Serve hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	55.28	8.32	3.52	2.50	3.45	225.54	265.48
Kodo millet	43.48	7.61	3.64	6.57	3.33	53.60	148.50
Little millet	51.75	8.56	3.47	5.10	5.39	17.44	236.00
Barnyard millet	43.60	6.95	3.92	5.45	3.43	16.34	214.50

#### 10. CHAPPATHI

#### **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour - 100g Wheat flour - 25 g Onion - 20 g Domestic leaves - 20 g Curry leaves - 5 g Coriander leaves - 10 g Green chilies - 4 no. Cumin seed - 1 teaspoon Salt - as required Oil - as required

#### Method

- ❖ Add salt and water to the flour and knead it into soft dough.
- ❖ Make round balls and roll to flat chappathi.
- ❖ Toast the chappathi on a preheated pan.
- **Serve** hot with any curry or chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	89.25	10.25	1.67	3.9	5.22	354.25	359.50
Kodo millet	84.12	11.25	1.20	4.36	2.16	30.00	217.00
Little millet	84.8	10.65	5.07	7.9	10.62	27.25	296.5
Barnyard millet	83.90	10.85	4.50	4.68	3.96	12.20	254.00

#### 11. KHAKRA

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour  $\,$  - 500 g

Wheat flour - 500 g

Salt - 20 g

Water - as required

#### Method

❖ Add salt and water to the flour and knead into soft dough.

- ❖ Make balls (30 g) and roll into round shape.
- ❖ Toast the khakra on a preheated pan, press with a dry cloth and turn frequently.
- Serve hot with channa masala or dal.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	71.6	9.5	1.40	2.40	4.60	192.50	294.5
Kodo millet	73.50	10.1	1.45	5.10	2.69	23.50	247.00
Little millet	69.1	9.8	3.10	4.40	7.30	29.00	260.00
Barnyard millet	73.55	9.0	1.85	9.50	5.15	20.50	293.00

#### 12. SMALL MILLET METHI RICE

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice - 700 g - 50 g Oil Mustard -10g Black gram dhal - 10g Bengal gram dhal - 10g Methi leaves - 125g Onion - 50 g Green chilies - 20g Lemon juice - 10 ml Curry leaves - as required - a pinch Turmeric Salt - as required

#### Method

- \* Cook the rice.
- ❖ Fry all the ingredients except rice.
- ❖ Add rice slowly with continuous stirring.
- **Serve** hot with coconut chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	71.10	5.41	5.46	3.56	3.43	250.80	231.45
Kodo millet	62.54	5.68	8.26	5.82	2.34	36.80	149.00
Little millet	63.40	6.18	6.72	5.86	6.56	15.70	218.00
Barnyard millet	64.10	4.93	8.59	6.20	3.93	14.20	214.50

## II. SWEET RECIPIES

#### 1. SWEET PONGAL

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice -400gm

Green gram dhal -200gm

Jaggery/sugar -300gm

Cashew -50gm

Raisins -50gm

Ghee -as required
Cardamom - as required

#### Method

❖ Cook Small millet rice and green gram dhal.

❖ The pongal in low flame by adding the ghee with continuous stirring.

❖ Add roasted cashew nut, cardamom and raisins.

**Sweet pongal is ready to serve.** 

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	41.85	8.84	1.81	2.26	3.23	164.00	246.80
Kodo millet	39.41	9.24	1.85	4.42	1.87	37.12	208.80
Little millet	39.85	9.10	2.17	3.86	5.39	33.12	221.60
Barnyard millet	39.25	8.4	1.16	4.74	3.67	26.32	245.60

#### 2. HALWA

#### **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour - 200 g

Wheat flour - 100 g

Powdered sugar - 350 g

Ghee - 300 g

Cashewnuts - 50 g

Water - as required

#### Method

❖ Fry Small millet flour and wheat flour with half the amount of ghee.

- ❖ Add fried flour to the boiled milk and water with continuous stirring to avoid lumps.
- ❖ When it solidifies, add sugar, ghee and cook to the required consistency.
- ❖ Add roasted cashew nuts and raisins when the solid mass leaves the sides of the pan.
- Spread on a greased tray and cut into pieces.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	53.65	4.33	35.08	1.21	1.79	111.80	130.20
Kodo millet	56.03	3.97	32.80	2.06	0.93	16.90	96.00
Little millet	52.15	4.45	36.10	2.41	3.41	13.70	111.30
Barnyard millet	55.95	3.55	32.90	2.22	1.83	15.50	124.00

#### 3. SWEET KOLUKATTAI

## **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet flour - 600 g

Jaggery - 200 g

Shredded coconut - 100 g

Roasted bengal gram dhal - 50 g

Sesame seeds - 50 g

Cardamom - as required

Salt - as required

#### Method

❖ Add required amount of water and salt to the Small millet flour and mix it thoroughly.

- ❖ Prepare filling by mixing shredded coconut, jaggery and cardamom powder.
- ❖ Flatten the dough on a plantain leaf.
- ❖ Fill the mixture on the dough and fold it.
- ❖ Steam cook the filled dough in *idli* cooker for 15 minutes.
- **Serve** it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	70.13	6.09	4.35	3.39	3.54	273.40	240.65
Kodo millet	65.30	7.97	7.48	6.41	1.99	110.00	199.70
Little millet	66.38	6.39	6.87	6.39	7.59	28.15	193.40
Barnyard millet	65.04	6.61	8.00	6.93	4.90	30.45	198.50

#### 4. PAYASAM

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet rice - 300 g - 300 g Jaggery Cardamom powder - 20 g Cashew nuts - 50 g Raisins - 50 g Ghee - 80 g Milk - 200 ml Water - 350 ml

#### Method

- ❖ Boil milk and water for 10 minutes.
- ❖ Add Small millet rice, jaggery and cook for 10 15 minutes.
- ❖ Fry cashew nuts and raisins in ghee.
- ❖ Add cardamom powder, fried cashew nuts and raisins to the kheer.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	56.42	4.71	11.74	3.11	1.28	102.53	142.35
Kodo millet	54.43	4.33	11.30	3.22	1.77	55.70	109.00
Little millet	56.32	5.26	12.58	3.47	1.23	52.41	126.48
Barnyard millet	54.30	10.80	11.30	3.46	1.37	19.80	213.12

#### **5. ADHIRASAM**

#### **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 250g Raw rice flour - 250g Jaggery - 500g

Cardamom powder - as required
Dry ginger - as required
Water - as required
Oil - for frying

#### Method

- ❖ Mix Small millet flour and raw rice flour thoroughly.
- ❖ Sprinkle little water, mix it thoroughly and keep it for four hours.
- ❖ Mix jaggery with required water and heat to syrup consistency.
- ❖ Add jaggery syrup and stir the flour to make smooth dough.
- ❖ Allow it to ferment overnight at room temperature.
- ❖ Flatten the fermented dough on a greased polythene sheet.
- ❖ Deep fry the flattened dough in hot oil for 2-3 minutes till it turns golden brown.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	82.32	3.41	0.24	2.15	18.34	108.36	125.12
Kodo millet	83.50	3.98	0.53	2.30	16.30	49.30	107.00
Little millet	84.21	3.27	0.81	2.43	12.42	52.31	124.24
Barnyard millet	83.43	3.45	0.73	2.50	17.40	27.50	132.25

#### 6. KESARI

#### **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet rava - 300 g Sugar - 400 g Milk - 100 ml Ghee - 100 g Cashew nuts - 50 g **Raisins** - 50 g Water - 500 ml Lemon yellow colour - as required

## Method

❖ Heat ghee in a pan, add Small millet rava and fry till it turns light brown.

- ❖ Add sugar, milk and a pinch of required colour to water and allow it to boil for 5-10 minutes.
- ❖ Add Small millet rava to the boiling water with continuous stirring and cook for 15 to 20 minutes.
- ❖ Decorate with cashew nuts and dry fruits and serve it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	63.21	5.34	11.25	2.63	0.85	110.50	124.30
Kodo millet	64.90	5.05	13.20	2.82	0.95	33.90	93.80
Little millet	62.35	6.21	11.26	2.63	1.21	36.51	124.53
Barnyard millet	64.70	11.60	13.50	3.06	2.30	25.80	121.36

#### 7. SWEET ADAI

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 400 g

Roasted bengal gram flour - 150 g

Green gram flour - 150 g

Jaggery - 300 g

Water - as required

#### Method

❖ Prepare jaggery syrup with required amount of water.

- ❖ Add Small millet flour, roasted bengalgram flour, green gram flour to the syrup and mix thoroughly.
- \* Knead the mix to a thick consistency.
- ❖ Flatten the dough on a tawa and cook till golden brown colour.
- Serve it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	72.34	10.52	1.32	3.62	2.86	84.62	153.40
Kodo millet	72.57	10.50	1.55	3.87	3.01	54.80	199.00
Little millet	73.26	9.34	1.34	3.62	3.25	36.87	168.42
Barnyard millet	72.40	9.66	1.86	4.19	4.81	17.56	205.14

#### 8. MLLET BOLI

## **Ingredients**

Refined wheat flour - 500g
Salt - 1 pinch
Water - as required.

#### Stuffing

Finger millet/ kodo millet/

little millet/ barnyard millet rava - 100g
Sugar - 150g
Ghee - 40g
Cardamom - 10g
Water - 1 cup

#### Method

- ❖ Mix refined wheat flour with required amount of water to thick dough consistency.
- ❖ Make balls and roll it in to round shape in polythene sheet.
- ❖ Add sugar, cardamom and ghee to the Small millet rava and cook till the mix does not stick to the sides of the pan.
- Fill the mixture on the dough sheet, fold it and roll as thin as possible.
- \* Toast the boli on a preheated tawa.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	86.24	8.30	3.30	3.62	3.84	354	295.35
Kodo millet	75.90	10.30	3.40	7.65	1.53	47.32	195.36
Little millet	76.25	9.70	5.73	7.63	8.26	29.35	245.68
Barnyard millet	85.60	8.20	4.56	8.32	4.23	26.42	238.24

## III. SNACKS

#### 1. VADA

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet rice - 500 g

Bengal gram dhal - 250 g

Onion (chopped) - 150 g

Green chilies (chopped) - 80 g

Curry leaves - 20 g

Salt - as required
Oil - for frying

#### Method

- ❖ Soak millet rice and bengal gram dhal for 4 hours and grind coarsely to thick consistency.
- ❖ Mix all the ingredients into the dough.
- ❖ Make small round balls and flattened on a greased polythene sheet.
- ❖ Deep fry the dough in hot oil till they turn golden brown in colour.
- **Serve** hot with chutney.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	58.38	16.96	2.52	2.05	3.66	223.88	322.63
Kodo millet	51.40	9.97	2.19	5.56	2.13	52.50	193.00
Little millet	56.88	17.08	2.31	3.25	5.28	11.88	303.73
Barnyard millet	51.20	8.92	2.59	5.96	4.38	49.00	239.00

#### 2. PAKODA

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 750 g

Onion (chopped) - 150 g

Green chilies (chopped) - 50 g

Cumin seeds - 30 g

Curry leaves - 20 g

Salt - as required
Water - as required
Oil - for frying

#### Method

❖ Add all the ingredients and water to the flour and make it into thick dough.

• Deep fry the dough in hot oil in different shapes.

Serve hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	62.62	6.28	25.93	2.76	2.95	244.00	225.47
Kodo millet	52.90	7.33	1.57	7.67	1.15	76.75	170.00
Little millet	59.12	6.56	28.38	5.56	6.73	15.10	181.37
Barnyard millet	49.40	5.44	2.06	7.78	4.27	70.50	225.00

#### 3. RIBBON PAKODA

#### **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour -900 gButter -50 g

Chili powder - 30 g

Sesame seeds - 20 g

Salt - as required
Water - as required
Oil - for frying

#### Method

❖ Add all the ingredients to the flour and mix it thoroughly.

Prepare the dough by adding water.

❖ Extrude the dough in a hand extruder and deep fry in hot oil till they turn golden brown colour.

**Extrude** the dough in a hand extruder through ribbon pakoda dye.

❖ Deep fry the extruded ribbon pakoda till they turn golden brown.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	65.20	6.52	6.21	12.25	3.15	175.68	225.20
Kodo millet	60.76	8.32	6.37	9.07	0.71	58.10	192.00
Little millet	61.87	7.51	1.54	3.42	3.54	13.24	268.65
Barnyard millet	60.40	6.43	70.90	9.79	4.76	51.80	274.00

#### 4. HOT KOLUKATTAI

#### **Ingredients**

Finger millet/ kodo millet/

little millet/barnyard millet flour - 600 g Onion (chopped) - 150 g Green chilies (chopped) - 50 g Curry leaves - 20 g Coriander leaves - 20 g Asafoetida - 20 g - 20 g Mustard seed - 20 g Black gram dhal - 100 ml Oil Salt - as required Water - as required

#### Method

- ❖ Add required quantity of water to the Small millet flour and mix thoroughly without lumps.
- Season the ingredients and add to the Small millet flour mix.
- ❖ Boil the mix with continuous stirring till it reaches a thick dough consistency.
- ❖ Form the dough into oval shapes and steam cook for 15-20 minutes in *idli* cooker.
- Serve hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	46.21	6.32	11.25	6.14	1.59	98.34	124.60
Kodo millet	45.11	6.55	11.90	6.12	1.78	70.70	151.00
Little millet	42.85	5.37	11.24	5.81	1.68	54.82	142.36
Barnyard millet	44.87	5.29	12.30	6.60	4.48	66.46	206.00

#### 5. MURUKKU

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 850 g

Chili powder - 30 g

Sesame seeds -30 gCumin seeds -20 gAsafoetida -20 gButter -50 g

Salt - as required
Water - as required
Oil - for frying

#### Method

❖ Add all the ingredients to the flour and mix uniformly.

Prepare thick dough by adding required water.

**\*** Extrude the dough in hot oil using a hand extruder.

❖ Deep fry in hot oil till it turns golden brown in colour.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	67.53	7.83	6.67	12.52	3.04	178.90	228.42
Kodo millet	56.50	8.12	6.98	8.52	1.77	105.00	189.80
Little millet	65.53	8.37	8.07	4.12	5.20	13.15	203.22
Barnyard millet	56.20	6.44	7.62	9.16	5.37	99.70	263.00

#### 6. OMAPODI

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 800g
Rice flour - 160g

Chili powder - 20g

Pepper powder - 20g

Salt - to taste

Water - as required

#### Method

❖ Mix together Small millet flour, rice flour and sieve.

Prepare thick dough by adding required water

**\*** Extrude the dough in a hand extruder through omapodi dye.

• Deep fry the extruded omapodi till they turn golden brown.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	69.37	10.68	2.73	3.87	4.55	266.75	279.24
Kodo millet	68.26	10.57	2.85	3.45	3.59	46.85	185.64
Little millet	66.62	10.90	4.65	6.07	7.52	14.90	244.59
Barnyard millet	63.12	11.84	3.45	5.84	6.42	24.31	154.32

#### 7. THATTU VADAI

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour  $-800 \mathrm{~g}$ Roasted bengal gram dhal  $-100 \mathrm{~g}$ Butter  $-50 \mathrm{~g}$ 

Chili powder - 30 g

Curry leaves - 20 g
Salt - 20 g

Water - as required
Oil - for frying

#### Method

❖ Add all the ingredients to the flour and mix thoroughly.

Prepare thick dough by adding required water.

❖ Flatten the dough to thin round shapes on a polythene sheet.

❖ Deep fry it in hot oil till they turn golden brown.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	49.18	6.46	31.34	2.28	2.87	278.24	202.90
Kodo millet	59.85	9.49	5.90	8.34	1.44	48.80	197.00
Little millet	46.18	6.70	33.38	4.80	6.11	15.80	165.10
Barnyard millet	59.50	7.81	6.54	8.98	5.04	43.20	270.00

#### 8. SEEDAI

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet rava - 600g
Black gram flour -200g
Jaggery -200g
Cardamom -5 No.
Ghee - to fry
Sesame - as required
Water - as required

#### Method

- ❖ Mix the roasted Small millet rava with black gram flour.
- ❖ Add powdered cardamom and sesame to the mix.
- ❖ Add sugar syrup and mix with the seedai mix.
- ❖ Make small balls and fry it in hot oil or ghee.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	63.00	6.89	3.71	3.38	3.53	220.00	165.50
Kodo millet	69.95	7.39	3.77	4.08	1.83	61.50	118.00
Little millet	60.50	8.09	3.41	5.38	5.18	56.50	154.00
Barnyard millet	59.75	7.34	3.16	4.48	4.08	48.00	164.00

#### 9. SMALL MILLET VEGETABLE PAKODA

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 250g

Bengal gram flour - 75g

Carrot, beans, peas - 50 g

Onion - 75g

Green chilies - 6 no.

Curry leaves - as required
Coriander leaves - as required
Oil - as required
Salt - as required

#### Method

❖ Add all the ingredients and water to the flour and make it into thick dough.

• Deep fry the dough in different shapes in hot oil.

Serve it hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	63.20	7.52	6.21	2.25	3.15	145.68	215.20
Kodo millet	61.76	8.42	6.37	4.35	0.71	51.50	178.00
Little millet	61.72	7.15	1.54	3.12	3.54	11.98	228.65
Barnyard millet	60.80	6.73	70.90	3.49	4.76	57.40	264.50

## IV. PUFFED PRODUCTS

#### 1. SMALL MILLET POPCORN

## **Ingredients**

Finger millet/ kodo millet/

little millet/barnyard millet - 250g

Water - as required

#### Method

- Soak the Small Millets for 1 to 2 hours.
- ❖ Drain the water and temper the grains for 30 minutes.
- ❖ The tempered grains were surface dried for 1 hr.
- Evenly grained, processed sand was heated in a kadai to a temperature of 270°C.
- ❖ The Small Millets were puffed till the process was complete.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	72.00	7.30	1.30	3.6	3.90	344.00	283.00
Kodo millet	65.90	8.30	1.40	9.0	0.50	27.00	188.00
Little millet	67.00	7.70	4.70	7.6	9.30	17.00	220.00
Barnyard millet	65.50	6.20	2.20	9.8	5.00	12.30	280.00

## V. PASTA PRODUCTS FROM SMALL MILLETS 1. VERMICELLI

## **Ingredients**

Refined wheat flour - 80g

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 20g Water - 30 ml Salt - to taste

#### Method

❖ Sieve refined wheat flour and Small millet flour blends in a BS 60 mesh sieve.

❖ Add water, salt and knead the flour into smooth soft dough.

❖ Keep it for 30 minutes and extrude using a hand extruder.

❖ Steam the vermicelli for 5 minutes.

❖ Dry the vermicelli and pack in airtight bags/containers.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	62.00	5.43	0.85	2.11	2.90	312.00	253.00
Kodo millet	60.40	7.24	0.96	2.24	0.50	22.00	148.00
Little millet	60.12	6.37	0.87	1.42	6.30	14.50	187.00
Barnyard millet	60.24	5.18	0.78	1.15	4.54	11.13	227.00

### 2. MACARONI

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 200 g

Refined wheat flour - 800 g

Salt - as required

### Method

❖ Add water and knead the flour into smooth soft dough.

\* Cook this dough for five minutes.

Press this dough using hand extruder.

❖ Dry the macaroni and pack in airtight bags/containers.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	62.00	5.43	0.85	2.11	2.90	312.00	253.00
Kodo millet	60.40	7.24	0.96	2.24	0.50	22.00	148.00
Little millet	60.12	6.37	0.87	1.42	6.30	14.50	187.00
Barnyard millet	60.24	5.18	0.78	1.15	4.54	11.13	227.00

# VI. BAKERY PRODUCTS FROM SMALL MILLETS

#### 1. SMALL MILLET BREAD

### **Ingredients**

Refined wheat flour - 800g

Finger millet/ kodo millet/

little millet/barnyard millet flour - 200g

Sugar - 170g

Fat - 20 g

Salt - 20g

## Yeast liquid

Sugar - 10g

Warm water - 500ml

Yeast - 30g

### Method

- Prepare yeast liquid by dissolving the sugar in the water. Sprinkle the yeast. Leave for 10-15 minutes until fluffy.
- \* Rub fat into flour add salt and yeast liquid. Prepare dough.
- ❖ Turn onto lightly floured board and knead till soft and elastic (20 minutes for kneading).
- ❖ Cover and leave to rise. Remove and knead lightly. Grease 2 bread tins.
- Divide dough into two. Stretch each piece as oblong, the same width as tin and fold over in three.
- ❖ With the seam underneath, smooth over top, tuck in ends and place in tin.
- ❖ Place in a covered vessel or greased bag and leave to rise (20 to 30 minutes).
- ❖ Bake in a very hot oven for 30 to 40 minutes at 200°C.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	72.56	8.36	2.91	1.36	2.13	126.82	220.60
Kodo millet	74.79	8.69	2.90	1.31	1.96	21.54	185.85
Little millet	74.58	8.59	3.76	1.46	3.36	19.88	175.52
Barnyard millet	73.96	9.35	3.24	1.53	2.28	22.21	154.50

#### 2. SMALL MILLET BUN

# **Ingredients**

Refined wheat flour - 800g

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 200g Water - 500ml

Milk - 20g or Milk powder - 100ml

 Yeast
 - 20g

 Sugar
 - 200g

 Salt
 - 15g

 Fat
 - 30g

### Method

❖ Yeast liquid: yeast with little warm water and pinch of sugar.

- ❖ Mix sugar and salt in the remaining milk.
- ❖ Mix flour, milk powder and make a well in the centre.
- ❖ Add soften yeast froth and sugar and salt mixed water.
- ❖ Knead to soft dough. Incorporate fat white kneading.
- ❖ Leave the dough for proofing. Knock back and knead lightly.
- ❖ Divide into 60g balls and leave it for rising.
- ❖ Glaze it with egg and bake at 200°C for 10 to 15 minutes.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	56.42	4.58	2.58	1.15	1.46	154.50	162.70
Kodo millet	62.68	5.45	2.64	1.07	1.67	17.00	196.00
Little millet	60.52	4.25	2.83	1.65	1.69	17.33	152.00
Barnyard millet	62.41	4.79	2.15	1.77	1.38	20.20	147.00

### 3. SMALL MILLET BISCUIT

## **Ingredients**

Refined wheat flour - 500g

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 500g Fat - 400g Sugar - 250g

Baking powder - ¼ teaspoon

### Method

❖ Sieve flour with baking powder.

Cream, fat and sugar till light and fluffy.

❖ Sieved flour is mixed to the above cream.

❖ Make smooth dough necessary.

❖ Sheet the dough and cut with the biscuit cutter.

❖ Bake at 160°C for about 15 minutes.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	63.52	6.58	21.58	3.65	1.86	186.50	152.75
Kodo millet	66.48	6.45	20.74	3.07	1.47	19.04	186.50
Little millet	66.85	6.25	21.87	2.65	4.03	15.73	156.00
Barnyard millet	64.81	7.79	21.73	2.77	1.86	20.40	146.50

### 4. SMALL MILLET CAKE

# **Ingredients**

Refined wheat flour - 700g

Finger millet/ kodo millet/

little millet/ barnyard millet flour
Sugar
- 800g
Fat
- 800g
Egg
- 20 No.
Vanilla essence
- a few drops
Baking powder
- 1 teaspoon

### Method

❖ Sieve flour and baking powder twice.

Cream fat and sugar till light and fluffy.

❖ Beat the egg with vanilla essence.

❖ Fold in flour.

Prepare cake batter.

❖ Pour it in the tins and bake at 190°C for 20 minutes.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	63.52	8.28	21.78	2.65	1.26	176.50	182.75
Kodo millet	66.48	8.65	20.24	2.57	1.67	18.04	176.50
Little millet	66.85	8.75	21.97	2.45	4.13	16.73	154.00
Barnyard millet	64.81	8.62	21.63	2.37	1.80	29.50	143.50

#### 5. SMALL MILLET DOUGH NUT

## **Ingredients**

Refined wheat flout - 800g

Finger millet/ kodo millet/

little millet/barnyard millet flour - 200g

Baking powder - 1 teaspoon

Dalda - 30g Egg - 1 No. Salt - 15 g

Yeast liquid

Yeast - 30g Water - 500ml Sugar - 150g Oil - to fry

### Method

- ❖ Warm the water, add sugar and sprinkle yeast on the top.
- ❖ Allow it to rise for 5 to 10 minutes.
- ❖ Mix warm milk, sugar and salt. Sieve flour and make a shallow centre.
- ❖ Add egg, yeast liquid, sugar and salt.
- ❖ Add milk and prepare soft dough.
- ❖ Mix in fat while kneading.
- ❖ Allow it to rise to a double volume for one hour.
- ❖ Roll out 1.3<sup>rd</sup> of an inch. Cut with a doughnut cutter.
- ❖ Fry in medium heated oil till golden brown in colour.
- \* Roll in powdered sugar.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	64.00	6.43	3.85	1.11	1.90	196.00	263.00
Kodo millet	61.40	6.24	3.96	1.24	0.80	21.00	144.00
Little millet	62.12	6.67	4.87	1.42	0.78	15.50	180.00
Barnyard millet	63.24	5.98	4.78	1.15	1.54	14.13	212.00

### 6. SMALL MILLET BREAD ROLL

# **Ingredients**

Refined wheat flour - 800g

Finger millet/ kodo millet/

 $\begin{array}{ll} \mbox{little millet/ barnyard millet flour} & -200 \mbox{g} \\ \mbox{Dalda} & -20 \mbox{ g} \\ \mbox{Salt} & -15 \mbox{g} \end{array}$ 

Yeast liquid

 $\begin{array}{ccc} Sugar & & -180g \\ Warm \ water & & -500ml \\ Yeast & & -20g \end{array}$ 

### Method

Prepare bread dough used for preparing rolls.

❖ Divide dough into 60g pieces.

\* Roll into various shapes.

❖ Place on greased trays and leave to rise (30 minutes).

❖ Glaze and bake in hot oven for 15 to 20 minutes.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	60.00	6.40	3.25	0.98	1.64	145.00	243.00
Kodo millet	62.30	6.36	3.16	0.94	0.92	17.00	154.00
Little millet	63.10	6.51	4.17	1.12	0.89	13.50	187.00
Barnyard millet	64.14	5.86	4.28	0.96	1.21	11.53	226.00

## VII. INSTANT SMALL MILLET MIXES

# **Preparation of Quick Cooking Small Millets**

- Clean, wash and pearl the Small Millets.
- ❖ Dry the grains in a cabinet drier at 60°C for six hours.
- ❖ Pack the dried grains in airtight bags/ containers.

## **Preparation of Dehydrated Vegetables**

- Select fresh and firm vegetables.
- ❖ Wash the vegetables in running tap water.
- ❖ Cut the vegetables into small pieces of uniform size.
- ❖ Steam blanch all the vegetables for 3-5 minutes except onions and tomatoes.
- ❖ Dry all the vegetables in cabinet drier at 60°C for 6 hours separately.
- ❖ Pack the dehydrated vegetables separately in air tight bags/containers.
- **.** Use as required for the recipe.

### 1. VENPONGAL MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/barnyard millet - 500g Green gram dhal - 250 g Cashew nut - 100 g Curry leaves - 20 g Cumin seeds - 50 g Pepper - 50 g Ginger - 30 g Oil - 10 ml Salt - as required

### Method

- ❖ Mix all the ingredients in 10 ml of oil.
- ❖ Pack in airtight bags or container.
- ❖ Cook one part of instant pongal mix with three parts of water.
- Serve hot with chutney or sambar.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	51.82	10.84	4.81	2.26	3.23	194.00	216.80
Kodo millet	59.45	9.84	4.85	4.42	1.87	36.12	258.80
Little millet	59.84	9.90	4.57	3.86	5.39	38.42	241.00
Barnyard millet	59.45	10.40	4.76	4.74	3.67	22.53	215.00

### 2. TOMATO MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet - 500 g

Tomato - 300 g

Onion - 100 g

Green chilies - 50 g

Curry leaves - 20 g

Ginger - 10 g

Turmeric - 20 g

Salt - as required Oil - 10 ml

### Method

❖ Mix all the ingredients in 10 ml of oil.

❖ Pack in airtight bags or container.

❖ Cook one part of instant tomato mix with three parts of water.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	50.28	8.84	2.87	2.16	3.43	152.00	243.00
Kodo millet	53.25	7.84	2.81	3.42	1.47	32.12	218.00
Little millet	55.56	8.20	2.17	3.26	5.59	28.40	221.00
Barnyard millet	57.40	8.30	2.36	3.70	3.97	21.43	218.00

#### 3. BISIBELABATH MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/barnyard millet - 550 g Red gram dhal - 50 g - 50 g Bengal gram dhal Coriander - 20 g Fenugreek - 10 g Turmeric powder - 10 g Brinjal - 50 g Carrot - 50 g Beans - 50 g - 50 g Potato Onion - 50g - 10g Green chili Tomato - 50 g Oil - 10ml Salt - as required

### Method

- ❖ Mix all the ingredients in 10 ml of oil.
- ❖ Pack in airtight bags or container.
- ❖ Cook one part of instant Bisibelabath mix with three parts of water.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	58.32	4.31	6.74	3.25	1.38	126.50	186.35
Kodo millet	55.63	4.63	5.30	3.63	1.70	56.80	169.00
Little millet	58.62	5.60	5.60	3.76	1.46	56.25	136.80
Barnyard millet	55.80	5.80	6.26	3.68	1.53	26.51	186.50

### 4. PULIYOTHARAI MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet - 500g Tamarind powder - 200g

Chili powder - 50g

Bengal gram dhal - 100g
Black gram dhal - 100g
Turmeric - 50g
Oil - 10 ml
Salt - as required

### Method

❖ Mix all the ingredients in 10 ml of oil.

❖ Pack in airtight bags or container.

❖ Cook one part of instant puliyotharai mix with three parts of water.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	56.42	4.36	11.62	3.31	1.18	132.54	152.35
Kodo millet	54.35	4.39	11.42	3.22	1.78	58.70	125.00
Little millet	56.52	4.86	11.48	3.40	1.43	56.47	138.50
Barnyard millet	54.36	5.21	10.60	3.48	1.97	20.30	113.50

### **5. BIRIYANI MIX**

# **Ingredients**

Finger millet/ kodo millet/

little millet/barnyard millet - 500g - 50g Carrot Beans - 50g Peas - 50g Onion - 50g Tomato - 50g Curry leaves - 20g Chili powder - 50g Cloves - 20g Garlic - 50g Turmeric - 10g Mint - 50g Ginger - 50g Oil - 10ml

Salt - as required

## Method

- ❖ Mix all the ingredients in 10 ml of oil.
- ❖ Pack in airtight bags or container.
- ❖ Cook one part of instant Biriyani mix with three parts of water.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	64.43	6.43	6.64	5.52	3.44	168.50	248.00
Kodo millet	55.80	6.72	6.48	6.22	2.47	65.00	179.50
Little millet	63.50	6.47	8.47	5.12	4.40	43.50	153.52
Barnyard millet	51.50	5.84	7.64	5.36	4.37	79.50	223.00

### VIII. READY TO COOK SWEET MIXES

### Preparation of Small millet flour

- Grind the dried grains to powder form in a pulverizer.
- Sieve the flour through BS36 sieve.
- Pack the flour in airtight bags /container.

#### 1. HALWA MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 350 g
Sugar - 400 g
Milk - 100 ml
Orange colour - 10 pinch
Cashew nuts - 50 g
Ghee - 100 g

#### **Instant mix**

- Mix all the ingredients thoroughly except milk and ghee.
- Pack in airtight polythene bags/containers.

### **Preparation**

- ❖ Add one part of halwa mix in milk.
- ❖ Mix thoroughly without lumps.
- Melt butter in a hot tawa.
- ❖ Cook the mix in low flame by adding ghee with continuous stirring.
- Cook, till the mix does not stick to sides of the pan.
- Spread on a greased tray, allow cooling.
- Decorate with roasted cashew nuts.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	50.15	3.53	33.08	1.25	1.29	118.00	150.50
Kodo millet	52.23	3.47	32.80	2.56	1.24	18.00	94.00
Little millet	53.25	3.65	35.70	2.73	2.85	15.50	102.30
Barnyard millet	54.65	3.75	35.50	2.02	1.96	16.00	154.00

### 2. ADAI MIX

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 600 g

Roasted bengal gram flour - 50 g

Green gram flour - 150g

### **Instant mix**

❖ Mix all the ingredients thoroughly.

❖ Pack in airtight bags/containers.

### Method

❖ Mix Small millet adai mix with required water to thick dough consistency.

❖ Flatten the dough on a tawa and cook both sides.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	67.57	12.80	1.97	2.50	3.08	243.36	253.40
Kodo millet	62.35	11.90	1.90	3.35	2.58	23.60	224.00
Little millet	64.72	13.54	2.81	2.75	2.90	42.50	180.50
Barnyard millet	62.75	12.30	2.35	3.45	4.83	20.40	219.00

### 3. PAYASAM MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet vermicelli - 400 g

Sugar - 400 g

Milk - 100 ml

Cashew nut - 50 g

Raisins - 50 g

Ghee - as required

Cardamom - 10 nos.

### **Instant mix**

❖ Mix all the ingredients thoroughly, except milk and ghee.

❖ Pack in airtight bags/containers.

### Method

❖ Add Small millet vermicelli and sugar to boiling milk.

❖ Cook for 10-15 minutes.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	55.32	4.29	12.54	2.11	1.36	152.00	156.00
Kodo millet	55.53	4.37	15.36	2.22	1.70	55.62	129.00
Little millet	58.30	5.22	12.68	2.57	1.25	55.60	129.53
Barnyard millet	56.90	5.36	11.36	2.40	1.65	26.00	280.36

### 4. SWEET KOLUKATTAI MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 600 g

Jaggery - 200 g

Shredded coconut - 100 g

Roasted bengal gram dhal - 50 g

Sesame seeds - 50 g

Cardamom - as required
Salt - as required

### Method

❖ Mix all the ingredients thoroughly, except milk and ghee.

❖ Pack in airtight bags/containers.

## **Preparation**

- ❖ Add one part of water to one part of kolukattai mix and mix well, to a thick dough consistency.
- ❖ Allow it to stand for 20 minutes.
- ❖ Make kolukattai shapes and steam for 5-10 minutes.
- Serve hot.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	69.52	5.62	3.62	2.65	1.83	186.90	216.00
Kodo millet	64.26	5.83	3.50	2.13	2.63	69.58	253.50
Little millet	63.42	5.61	3.12	2.68	2.15	23.50	241.00
Barnyard millet	62.53	5.86	3.06	2.41	1.82	24.50	223.50

### **5. SWEET PONGAL MIX**

# **Ingredients**

Finger millet/ kodo millet/

Little millet/ barnyard millet rice -400gm
Green gram dhal -200gm
Jaggery/sugar -300gm
Cashew -50gm
Raisins -50gm

Ghee -as required
Cardamom - as required

### **Instant mix**

❖ Mix all the ingredients thoroughly, except ghee.

❖ Pack in airtight bags/containers.

### Method

❖ Add one part of sweet pongal mix to two parts water and cook.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	72.13	6.70	4.85	3.39	2.54	264540	246.60
Kodo millet	65.50	7.70	6.48	6.41	1.99	90.00	189.50
Little millet	64.48	5.98	5.87	6.39	2.59	27.50	194.50
Barnyard millet	62.54	6.68	7.69	6.93	2.90	28.40	188.50

# IX. READY TO COOK SNACK MIXES

#### 1. MURUKKU MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 750 g

Bengal gram flour - 130 g

Chili Powder - 20 g

Sesame seeds - 50g

Butter - 50 g

Salt - as required
Oil - as required

### **Instant mix**

❖ Mix all the ingredients thoroughly.

❖ Pack in airtight bags/containers.

### Method

❖ Mix the Small millet murukku mix with hydrogenated fat and required amount of water.

• Press the dough in a hand extruder using required murukku shape dyes in oil (180°C).

❖ Deep fry them in medium flame till they turn golden brown colour.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	59.35	6.95	5.62	7.54	3.24	186.50	221.30
Kodo millet	55.34	7.62	6.41	6.42	1.68	112.60	196.50
Little millet	65.42	8.26	8.15	3.84	5.34	15.62	211.60
Barnyard millet	52.62	5.86	6.82	7.30	4.61	76.20	264.30

### 2. RIBBON PAKODA MIX

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 750 g
Bengal gram flour - 130 g
Chili powder - 20 g
Sesame seeds - 50 g
Butter - 50 g

Salt - as required
Oil - as required

### **Instant mix**

❖ Mix all the ingredients thoroughly.

❖ Pack in airtight bags/containers.

### Method

❖ Mix the Small millet pakoda mix with hydrogenated fat and required amount of water.

❖ Press the dough in a hand extruder using ribbon pakoda shape dye.

❖ Deep fry in hot oil till they turn golden brown colour.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	68.23	6.81	6.38	2.34	2.86	169.51	224.80
Kodo millet	61.72	8.65	6.95	7.86	1.54	69.72	162.43
Little millet	62.62	7.26	1.32	3.28	2.85	24.39	186.20
Barnyard millet	61.82	6.58	3.21	8.24	3.16	58.30	221.80

### 3. OMAPODI MIX

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 700 g Bengal gram flour - 300 g

Salt - as required
Oil - as required

### **Instant mix**

❖ Mix all the ingredients thoroughly.

❖ Pack in airtight bags/containers.

### Method

❖ Mix the Small millet omapodi mix with hydrogenated fat and required amount of water.

Press the dough in a hand extruder.

❖ Fry in hot oil till they turn golden brown colour.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	54.43	14.84	2.46	2.15	3.27	228.41	318.36
Kodo millet	53.52	10.24	2.47	5.81	2.39	63.26	187.23
Little millet	59.76	11.72	2.73	3.34	3.21	28.15	92.57
Barnyard millet	58.83	11.52	2.43	4.42	3.29	46.22	125.41

### 4. VADA MIX

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 600 gm

Bengal gram flour - 300 gm
Onion - 50 gm
Green chilies - 20 gm
Curry leaves - 30 gm
Salt - as required
Oil - as required

### **Instant mix**

- ❖ Mix all the ingredients thoroughly.
- ❖ Pack in airtight bags / containers.

### Method

- ❖ Mix the vada mix with required water to a thick dough consistency.
- ❖ Make small round balls and flatten on a greased polythene sheet.
- Remove and deep fry in oil, till they turn golden brown in colour.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	56.36	14.35	2.62	2.08	3.47	223.41	312.36
Kodo millet	51.23	9.36	2.13	5.21	2.06	53.46	183.42
Little millet	58.62	14.02	2.45	3.26	4.19	12.35	312.37
Barnyard millet	58.47	10.23	2.19	4.95	3.87	54.20	240.85

## 5. VADAGAM

## **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 900 g

Chili powder - 50 g

Cumin seeds - 50 g
Salt - 20 g

Water - 6000 ml

### Method

❖ Add chillie powder, cumin seeds and salt to the flour.

❖ Mix with water to get thick batter.

❖ Drop the batter in greased plates using a spoon.

❖ Allow it to sun dry.

❖ Pack the dried vadagam in air tight bags or container.

• Deep fry the vadagam in hot oil when required.

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	64.80	6.57	1.17	3.24	3.51	309.60	254.7
Kodo millet	59.31	7.47	1.26	7.21	1.45	24.30	169.20
Little millet	60.30	6.93	4.23	6.84	8.37	15.30	198.00
Barnyard millet	58.95	5.58	1.98	6.82	4.50	12.64	252.00

### 6. PAPAD

# **Ingredients**

Finger millet/ kodo millet/

little millet/ barnyard millet flour - 400 g

Black gram flour - 600 g

Oil - 50ml

Cumin seeds - 50 g

Salt - 50 g

Sodium bicarbonate - 10 g

### Method

- ❖ Mix Small millet flour, black gram flour and cumin seeds thoroughly.
- ❖ Add salt and sodium bicarbonate in water and sprinkle on the flour to make stiff dough.
- ❖ Divide the dough into small portions.
- \* Roll out into thin circular shapes, shade dry and pack.

## Nutrient content (100 g)

Name of the Product	CHO (g)	Protein (g)	Fat (g)	Crude Fibre (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)
Finger millet	64.20	17.32	1.36	1.98	3.84	230.00	344.20
Kodo millet	61.76	17.72	1.40	1.14	2.48	103.20	306.20
Little millet	62.20	17.48	2.72	3.58	6.00	109.80	319.00
Barnyard millet	61.60	16.88	1.72	4.46	4.28	92.4	343.00

### 7. SMALL MILLET HEALTH MIX

# **Ingredients**

Wheat	- 200g
Kodo millet	- 200g
Little millet	- 200g
Foxtail millet	- 200g
Finger millet	- 200g
Whole green gram	- 100g
Whole Bengal gram	- 20g
Whole soya beans	- 20g
Sugar	- 100g
Peas (dried)	- 20g
Groundnut	- 20g
Almonds	- 20g
Cashew	- 20g
Dried ginger	- 5 g
Cardamom	- 2 g
Milk powder	- 20g

## **Preparation of malt**

- ❖ Wash millet seeds thoroughly in water.
- Soak the seeds for 5 hours
- ❖ Drain the excess water and tie in a muslin cloth.
- ❖ Shade dry the germinated seeds for 48 hours.
- \* Roast the seeds at 120°C and allow it to cool.
- Grind the germinated seeds to fine flour.
- ❖ Pack the flour in air tight bags or containers.

# Nutrient content (100 g)

Carbohydrate	Protein	Fat	Crude Fibre	Iron	Calcium	Phosphorus
<b>(g)</b>	(g)	(g)	(g)	(mg)	(mg)	(mg)
77.48	5.86	1.04	2.88	31.51	277.60	226.40

### Raw materials

M/S. Eswari Enterprises
 Shop No.12/ Corporation Shopping Complex,
 West Arogyasamy Road,
 R.S.Puram, Coimbatore-641 002.

2. M/S. Viveka Agencies, 657, Thomas Street, Coimbatore - 641 001.

### **Fats and Oils**

M/S. Prabha Traders,
 918-A, Rangai Gowder Street,
 Coimbatore - 641 001.

## **Packaging materials**

4. M/S. Thangam Paks, 802, Raja Street, Coimbatore - 691001.

### 5. SEELERS INDIA AGENCIES,

No-118/19, A-1 Block, 8th main road, (Telephone exchange back side) Shanthy colony, Anna Nagar, Chennai - 600040.

## **Machineries**

6. M/S. Arun's Engineering Works, No.213, Sitra Kalapatti Road, Near, LMW, Unit VIII, Kalapatti Post, Coimbatore - 641035.

7. Imayam Engineering Works
Bakery Machines and Ovens
Pollachi main road, Near Eachanari railway gate
Coimbatore -641 021

### 8. SCIENCE WORLD

8G, Venkateswara Layout, Sastri Street, Thillai Nagar, Selvapuram, Coimbatore – 641 026

## 9. SRI GANESH MILL STORE,

Kings Complex, 344, Dr. Nagappa road, Coimbatore-641018.

## 10. SARASWATHI INDUSTRIES,

41, A, 1 G P Nagar, Krishnapuram, Saravanampatti (PO), Coimbatore-641035.

### 11. VICTOR MACHINES,

4/235, Allamarakadu, Munniyappan kovil backside, Salem-636004.

## 12. GANAPATHI COTTAGE INDUSTRIES,

38/16A, Kamarajar Nagar, 2nd Street, R.K. Puram, Ganapathi (PO), Coimbatore - 641006.