



सत्यमेव जयते



एक कदम स्वच्छता की ओर

R. C. MEENA
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Tel: 011-23389247



सूचना का
अधिकार

भारत सरकार
मानव संसाधन विकास मंत्रालय
स्कूल शिक्षा और साक्षरता विभाग
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नई दिल्ली - 110 115

GOVERNMENT OF INDIA
MINISTRY OF HUMAN RESOURCE DEVELOPMENT
DEPARTMENT OF SCHOOL EDUCATION & LITERACY
SHASTRI BHAVAN
NEW DELHI-110 115

D.O. No. 4-6/2018-MDM- 1-1 (EE.5)

Dated the 17th February, 2020

Dear Sir / Madam,

As you are aware, that Millets have multiple benefits and it is called nutri-grains since they are rich in micronutrients like minerals and B-complex vitamins. Jowar (Great Millet), Bajra (Pearl Millet), Ragi (Finger Millet), Arke (Kodo Millet) are the most prominent millets. These are easily available in the form of cracked grain and also flour forms.

2. It was requested earlier vide DO letter of even number dated 6th September, 2019 that millet and millet based recipe should be included under Mid Day Meal Scheme(MDMS) as millets are nutrient dense food and was advised to take suitable steps to identify the millets as-per the food habits in your States/UTs and include in the Mid Day Meals in preferred frequency.

3. In this connection, the meeting was held on 07.01.2020 under the Chairmanship of Shri Amitabh Kant, CEO, NITI Aayog, emphasising the importance of millets from health and nutrition perspective. A write-up to promote the benefits of millet in safety net schemes has been prepared and enclosed herewith to take necessary action for inclusion of millets in Mid Day Meal Scheme.

4. I would, therefore, request you to share the write-up on millets with concerned authorities in your States/UTs and instruct them to include millet/millet based recipe in Mid Day Meal.

With regards

Encl: As above

Yours sincerely,

(R.C. MEENA)

The Education Secretaries/ Nodal Officer for Mid Day Meal in all the States/UTs.



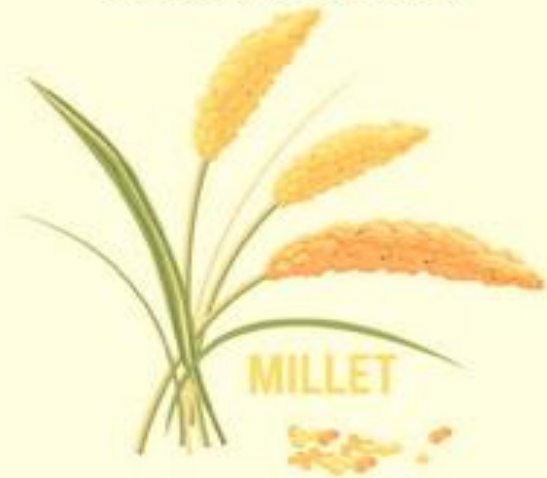
शिक्षा का अधिकार

सर्व शिक्षा अभियान

सब पढ़ें सब बढ़ें

Multifaceted Millets

Nutritionally Rich



Climate Smart



Farmer friendly



Inclusion of Millet based recipes in ICDS & MDM

Nutritionally Rich Nutri-Cereals



Millets are highly nutritious and rich in essential macro and micro-nutrients required for maintenance of optimal health status: **Richest source of Protein, Dietary fibre, Calcium, Magnesium, Iron, Zinc, Thiamine (B1), Riboflavin (B2), Niacin (B3) and Folic Acid among all the cereals**

- **Finger Millet (*Ragi*) contains 10 times more calcium than wheat and its non-comparable with rice**
- **Pearl Millet (*Bajra*) contains 6 times more iron than rice and almost twice as wheat**
- **Small Millets contain more protein, B Vitamins and zinc as compared to rice and wheat.**
- **Millet based diets help improve Diet Diversity & Nutrition Security**
- **Millets are also rich in Dietary Fiber and Antioxidants which play a protective role in our body**
- **Millets have low glycemic index and help prevent and manage rise in blood sugar level**

Following points be considered when introducing Millet based recipes in ICDS & MDM:

1. **Selection of Millet variety**- This should be based on: Nutritional needs, cultural sensitivity and taste preferences of targeted group (traditionally consumed millets have greater chances of acceptability).
2. **Bio-availability of Nutrients**- Specific combination of foods are critical to ensure bioavailability of nutrients and avoid inhibiting actions (Support from technical institutions like IIMR, CFTIR, NIN can be taken to address this).
3. **Processing and cooking of Millets**- With correct processing and cooking method, we can significantly improve the nutrient availability and digestibility of Millets. Further, individuals preparing the food under these schemes should be trained in new cooking methods.



Climate Smart Crop



India, primarily being an agrarian economy, is grappling with water scarcity issue as almost 90% of the water in our country is consumed in agricultural activities. Thus it becomes necessary to promote Millets which are low water requiring crops (only need 350-400mm annual rain) and can survive in high temperatures. **They are climate smart and environmentally sustainable owing to following attributes:**

- ❖ Need less water for growth- 70% lesser than Rice and 30% lesser than Maize
- ❖ Require minimal Fertilizers & Pesticides for their growth
- ❖ Leaves low carbon foot print and helps in lowering atmospheric CO₂
- ❖ Resilience to climate change (C4 plant) & ideal contingent crop



Farmer Friendly



- ❖ Millets are good for farmers as they are one of the last crop standing in times of drought and can survive in dry hot conditions.
- ❖ They also have the potential for increased yield which can result in good returns to the farmer.
- ❖ Globally, there is growing interest in the health and nutritional quality of Millets as they fit into some of the biggest global health food trends- low GI, high fibre and likewise. Establishing a global market for this crop can give a new value to it
- ❖ Millets have multiple uses. They can be used as food, fodder & feed, Biofuel and in brewing.



Lessons learnt: State Government and other Stakeholders Initiatives

Inclusion of Millets in the MDM Menu

- Acceptance and Nutritional impact study conducted by ICRISAT
- Meals prepared by Akshaya Patra Foundn & included 60% or more Millets/meal
- Target group- 1500 adolescent school children belonging to peri-urban area of Bengaluru, Karnataka
- Intervention period- 3 months
- Major findings:
 - 50% faster growth observed among children
 - Children rated meals 4.5/5 on acceptability parameter

An initiative with ICDS in Srikakulam District of Andhra Pradesh

- District administration initiative with support from WASSAN
- Objective- To provide higher level of essential nutrients to children (3 to 6 yrs)
- Millets based menu served 4 days a week i.e. 16 days in a month
- Outcome- Enhanced nutritional quality of Meal
 - 42% higher protein
 - 2.6 times more calcium
 - 5 times more iron
 - 59% higher zinc

Special programme for promotion of Millets in Tribal Areas (Odisha Millets Mission)

- Promotion of household level consumption of Millets through inclusion in ICDS, MDM and PDS
- Established a value chain mechanism
- Procuring traditionally consumed Millet (Ragi) at MSP for the implementation of scheme
- Developing and testing the recipes with CFTRI to be implemented in 7 Districts, to begin with

Other State Government Initiatives:

- Andhra Pradesh Govt. has recently passed a Bill to establish a Millet Board for supporting the small and marginal farmers under Rythu Bharosa Scheme
- Maharashtra has also shown interest to initiate a mission on the lines of OMM and also facilitated a study to work out the possibilities and cost of including Millets in PDS and other safety welfare programmes
- Chhattisgarh State Government also intends to include Millets based recipes in ICDS and MDM

Nutritional Value of Millets in comparison to Whole Wheat & Rice

Grain (Millet /Cereal)	Carbo-hydrates (g)	Protein (g)	Fat (g)	Energy (Kcal)	Dietary Fibre (g)	Ca (mg)	Mg (mg)	Zn (mg)	Fe (mg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Folic acid (µg)
Sorghum	67.7	10.0	1.7	334.1	10.2	27.6	133.0	2.0	4.0	0.4	0.1	2.1	39.4
Pearl Millet	61.8	11.0	5.4	348.0	11.5	27.4	124.0	2.8	6.4	0.3	0.2	0.9	36.1
Finger millet	66.8	7.2	1.9	320.7	11.2	364.0	146.0	2.5	4.6	0.4	0.2	1.3	34.7
Kodo millet	66.2	8.9	2.6	331.7	6.4	15.3	122.0	1.7	2.3	0.3	0.2	1.5	39.5
Proso millet*	70.4	12.5	1.1	341.1	-	14.0	153.0	1.4	0.8	0.4	0.3	4.5	-
Foxtail millet*	60.1	12.3	4.3	331.0	-	31.0	81.0	2.4	2.8	0.6	0.1	3.2	15.0
Little millet	65.6	10.1	3.9	346.3	7.7	16.1	91.4	1.8	1.3	0.3	0.1	1.3	36.2
Barnyard millet*	65.6	6.2	2.2	307.1	-	20.0	82.0	3.0	5.0	0.3	0.1	4.2	-
Wheat	64.7	10.6	1.5	321.9	11.2	39.4	125.0	2.9	4.0	0.5	0.2	2.7	30.1
Rice	78.2	7.9	0.5	356.4	2.8	7.5	19.3	1.2	0.7	0.1	0.1	1.7	9.3

Source: Indian Food Composition Tables, NIN – 2017; *Nutritive value of Indian Foods, NIN – 2007

Related Links/Further reading:

- <http://www.millets.res.in/pub.php>
- <http://www.icrisat.org/smartfood/#initiative>
- Inclusion of Millets in MDM menu study- <https://www.icrisat.org/wp-content/uploads/2019/12/Millets-Study-Nutrients.pdf>
- Sub-mission on Nutricereals under NFSM guidelines <https://www.nfsm.gov.in/Guidelines/NFSM12102018.pdf>
- Millet based recipes- http://www.millets.res.in/m_recipes.php
- Nutritive value of Millets and other cereals-
<http://www.indiaenvironmentportal.org.in/files/file/IFCT%202017%20Book.pdf>,
http://www.eeb.cornell.edu/biogeo/nanc/Food_Feed/table%201%20gopalan%20et%20al%201989.pdf