

CODEx ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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OTHER BUSINESS

(Comments of India)

Proposal for standardization of millets

Millets are renowned for their nutritional profile in addition to their environmental benefits and referred to as "Nutri-cereals". All member countries considered to include millets to the public food supply because of their excellent nutritional value and anti-diabetic properties. They ought to therefore be incorporated into any plans for changing the food system. A variety of UN Sustainable Development Goals, including achieving zero hunger, promoting overall health and wellbeing, responsible consumption and production, and addressing climate change, would benefit from this. Due to the importance of millets, UN has declared 2023 as the "International Year of millets", which led to an increase in demand for the product, on the basis of its nutritional value and provides an opportunity to increase global production, efficient processing and better use of crop rotation and promote millets as a major component of the food basket.

The annual global production of 25 million-ton has proved millet as a staple food for people in Africa and Asia, as well as for Europe up to the end of the middle ages. The total global trade of millets was \$201M in 2019 it increased substantially to \$204M in 2020 and \$210M in 2021.

To ensure availability of good quality (standardized) millets in domestic and global markets, India has framed a comprehensive group standard for 15 types of millets specifying 8 quality parameters i.e., maximum limits for moisture content, uric acid content, extraneous matter, other edible grains, defects, weevilled grains, and immature and shrivelled grains.

India wishes to propose the development of global standards for millets particularly for Finger millet, Barnyard millet, Kodo millet, Proso millet, Little millet as group standards as in case of pulses. Codex has standards for Sorghum, and Pearl millet and these standards would also be reviewed while making the group standards for millets. This standard will certainly be of interest to most of the producing countries and also to importing countries

We recognize that our proposal is little late, however, considering the fact that this year has been declared as "International Year of millets" by the UN and to reflect the growing international trade in these products, we would like to flag and propose the group standards for millets in this session.

The commission may consider and endorse the proposal for developing the group standards for millets. Accordingly, further works including submission of project document and development of draft standards will be initiated.

A reference project document is placed below.

Project Document

Group standards for certain millets

The millets are one of such nature's gifts for mankind which are a boon to the health conscious consumers. The millets are a very good source of dietary fiber and well known for minerals. Almost all millets are rich in phytonutrients which are playing important role in minimizing risk of different cardio-metabolic diseases including diabetes and cardiovascular diseases. The millets are processed by different ways viz. milling, soaking, germination, roasting, fermentation, popping, cooking, extrusion and radiation. Despite of the nutritional importance, millets are lagging behind in value addition and commercialization. This requires special efforts from the government authorities, food scientists and nutritionist to publicize and educate the consumers about the importance of millets and value added products

Scenario of millets: India and Global

The annual global production of 25 million-ton has proved millet as a staple food for people in Africa and Asia, as well as for Europe up to the end of the middle ages. The consumption of millet has decreased by 0.9% globally, and is projected to increase between 2019 and 2024. An anticipated increase in market of millets and millet based products is expected by 2025, with an estimated value of over \$9 billion to over \$12 billion. Favorable government measures will increase the size of the world millets market between 2019 and 2025.

Millets are renowned for their nutritional profile in addition to their environmental benefits and referred to as "Nutri-cereals. Due to their superior health and nutraceutical benefits, their consumption is worth in comparison to other cereals. The Indian government added millets to the public food supply because of their excellent nutritional value and anti-diabetic properties. They ought to therefore be incorporated into any plans for changing the food system. A variety of UN Sustainable Development Goals, including achieving zero hunger, promoting overall health and wellbeing, responsible consumption and production, and addressing climate change, would benefit from this.

The most prevalent millet species are pearl (*Pennisetum glaucum*), finger (*Eleusine coracana*), foxtail (*Setaria italica*) and proso (or white) (*Panicum miliaceum*), which together account for around 40% of the world's total production (Amadou et al., 2014). Kodo millet, barnyard millet and tiny millet are further varieties of millets. Millets are actually a type of small-seeded grass, and based on how widely they are cultivated and used globally, they can be divided into major and minor millets (McDonough et al., 2000).

In dry and semi-arid regions of the world, millets are an important food source. That are also considered a good sources of energy. Millets are a good source of natural antioxidants such glycated flavonoids and phenolic acids. Foods made from millet are regarded as potential prebiotics because they can improve the viability or functionality of probiotics, which has major positive effects on health. They supply dietary fibre, polyphenols, minerals, vitamins, fatty acids, protein, and other nutrients (Issoufou et al., 2013).

The proposal involve to create standards for following millets-

	Common name	Scientific name
Major Millet	Finger Millet	<i>Eleusine coracana</i>
Small Millets	Foxtail Millet	<i>Setaria italica</i>
	Barnyard Millet	<i>Echinochiva frumentacea</i>
	Kodo Millet	<i>Paspahlm scorbiculatum</i>
	Proso Millet	<i>Paioicum miliaceum</i>
	Little millet	<i>Panicum Sumatrense</i>

Finger Millet (*Eleusine coracana*)

Originally from Sudan, finger millet is mainly grown in Eastern Africa (Uganda, Kenya and the United Republic of Tanzania) and southern Asia (India and Nepal). While India is the largest producer of finger millets today, it is also

cultivated in Ethiopia, Rwanda, Malawi, Sudan, Zambia and Zimbabwe to a lesser extent. Finger millet is high in thiamin, copper, magnesium, phosphorus and selenium. It is also a source of iron.

Foxtail millet (*Setaria italica*)

Foxtail millet originated in northern China, before it spread to other parts of the world. Today, it is primarily grown in China, India, Afghanistan, Japan, the Democratic People's Republic of Korea, the Republic of Korea and Georgia. Foxtail millet is high in thiamin, pantothenic acid, copper, magnesium and phosphorus. It is source of iron, niacin, vitamin B6 and zinc.

Little Millet (*Panicum sumatrense*)

Evidence points towards the Indian peninsula as the origin of little millet. Today, it is mainly grown in India, Sri Lanka, Myanmar, Malaysia, Nepal and China. Little millet is high in copper, magnesium, selenium and sources of thiamin, phosphorus and zinc.

Kodo Millet (*Paspalum scrobiculatum*)

Kodo millets originated in India. Today, kodo millet is primarily grown in damp habitats across the tropics and subtropics of the world. Kodo millet is high in magnesium and selenium and sources of thiamin, riboflavin, copper and zinc.

Proso Millet (*Panicum miliaceum*)

The origins of proso millet go back to northern China. Today, it is mainly cultivated in China, India, Nepal, the Russian Federation, Ukraine, Belarus, the Middle East, the Republic of Türkiye, Romania and the United States of America. Proso millet is high in thiamin, copper, phosphorus, magnesium, zinc, and sources of iron, selenium, riboflavin, niacin, pantothenic acid and vitamin B6.

Japanese Barnyard Millet (*Echinochloa esculenta*)

The origins of barnyard millet are found in tropical Asia. Barnyard millet is widely cultivated in Asia, particularly in India, China, Japan, the Democratic People's Republic of Korea and the Republic of Korea. Barnyard millet is high in pantothenic acid, phosphorous and zinc. It is a source of thiamin, copper and magnesium.

1. Purpose and Scope-

The purpose of standards is to create standards for group of millets namely Finger millet, Barnyard millet, Kodo millet, Proso millet and Little millet.

The scope of this proposal to standardize group of millets which aids member countries to compliance of the requirements in the international trade.

2. Relevance and timelines-

Several Codex members have concerns about health and fair trade practices affecting the international trade in perishable and non-perishable goods. This can result in restrictions or prohibitions, especially when a product is not the subject of an internationally respected standard.

For this reason, India proposes the development of a certain millets Codex standard, to reflect the growing international trade in these products. This standard will certainly be of interest to producer countries such as India, Niger, Nigeria, Mali, China, Ethiopia, and to importing countries such as Indonesia, Germany, Belgium, United states, Canada and others.

3. Main aspects to be covered-

This standard includes Physico chemical characteristics, quality, contaminants and residues o agro chemicals. the mowt relevant items which may be considere, are related to:

- Establish the minimum requirements for the safety and quality of millets, which must be fulfilled regardless of the quality of the product.
- Define the categories in which the millets can be classified according to its size and colour.
- Include the requirements for homogeneity in package and packing methods to be considered.

- Define the information that must appear when marking and labelling the package, according to the guidelines established by the Codex Alimentarius Commission.
- Refer to the Codex provisions on food safety and hygiene applicable to the handling of food products.

4. Assessment against the criteria for the establishment of work priorities

General criterion

Millets are renowned for their nutritional profile in addition to their environmental benefits and referred to as "Nutri-cereals. Due to their superior health and nutraceutical benefits, their consumption is worth in comparison to other cereals. Developing an International standards for these millets will protect consumers from fraudulent practices while facilitating international trade.

Criteria applicable to commodity:

a). Volume of production in various countries and trade between countries (In million tonnes)

SI.No	Country	2018		2019		2020	
		Production	Share (%)	Production	Share (%)	Production	Share(%)
1	India	11640	37.52	10235.83	36.08	12490	41
2	Niger	3856.34	12.43	3270.45	11.53	3508.9	11.52
3	Nigeria	2240.74	7.22	2000	7.05	2000	6.57
4	Mali	1840.32	5.93	1878.53	6.62	1921.17	6.31
5	China	1565.96	5.05	2300	8.11	2300	7.55
6	Ethiopia	981.96	3.17	1125.96	3.97	1218.58	4
7	Senegal	574	1.85	807.04	2.84	1144.86	3.76
8	Burkina Faso	1189.08	3.83	970.18	3.42	957	3.14
9	Chad	756.62	2.44	717.62	2.53	686.58	2.25
10	Sudan	2647	8.53	1133	3.99	484.96	1.59
Total		27293.02	87.99	24438.61	86.14	26712.05	87.69
Other countries		3726.37	12.01	3933.19	13.86	3751.61	12.31
Total		31019.39		28371.8		30463.66	

Source-Food & Agricultural Organization (FAO)

b). Diversification of national legislations and apparent resultant or potential impediments to international trade.

It is necessary to develop millets standard, in order to have an international standard that can be used to prevent technical barriers to international trade, and as a means of protecting the consumer health and guaranteeing fair trade.

c). International or regional market potential

Promotional campaigns in 2023 crop year, declared the "International Year of millets", led to an increase in demand for the product, on the basis of its nutritional value.

c.1 Nutritional value-

Grain	Carbohydrates(g)	Protein(g)	Fat(g)	Energy(Kcal)	Dietary Fiber(g)	Ca(mg)	P(mg)	Mg(mg)	Zn(mg)	Fe(mg)	Thiamin(mg)	Riboflavin(mg)	Niacin(mg)	Folic acid(μ)
Finger millet	66.8	7.2	1.92	320	11.2	364	210	146	2.5	4.6	0.37	0.17	1.3	34.7
Kodo millet	66.2	8.9	2.55	331	6.4	15.3	101	122	1.6	2.3	0.29	0.2	1.5	39.5
Proso millet	70.4	12.5	1.1	341	-	14	206	153	1.4	0.8	0.41	0.28	4.5	-
Foxtail millet	60.1	12.3	4.3	331	-	31	188	81	2.4	2.8	0.59	0.11	3.2	15
Little millet	65.5	10.1	3.89	346	7.7	16.1	130	91	1.8	1.2	0.26	0.05	1.3	36.2
Barnyard millet	65.5	6.2	2.2	307	-	20	280	82	3	5	0.33	0.1	4.2	-

c. 2 International trade-

Export of Millets- The total global trade of millets was \$201M in 2019 it increased substantially to \$204M in 2020 and \$210M in 2021. Ukraine, India, USA and Russia together contributing to more than 50% global exports

S.No.	Country	Export (%)		
		2021	2020	2019
1	Ukraine	22	14.8	8.18
2	India	14.1	13	15.7
3	USA	12.7	23.5	29.7
4	Russia	8.46	6.01	6.19
5	France	6.7	5.61	6.3
6	China	5.4	4.32	6.4
7	Canada	4.01	1.77	2.44
8	Turkey	3.13	2.08	0.96
9	Tanzania	2.58	1.36	0.15
10	Austria	2.56	2.57	2.34
11	Netherlands	2.35	3.29	3.08
12	Argentina	1.7	1.49	0.79
13	Germany	1.35	1.72	1.76
14	Belgium	1.29	1.47	1.02

15	Poland	1.13	1.65	1.7
16	Bulgaria	1	0.28	0.2
17	Italy	0.66	0.51	0.6

d). Amenability of commodity to standardization:

The standardization of millets has already been initiated on certain millets and on certain aspects to consumer's protection and trade facilitation. Developing global standards would facilitate to come up with an inclusive standard in the global trade.

The characteristics that determine the commercial quality of millets, for example, the definition of the group of millets, classification by grain size or quality etc. are all amenable to standardization. The Food Safety and Standards Authority of India has specified a comprehensive group standard for millets. FSSAI has now framed a comprehensive group standard for 15 types of millets specifying 8 quality parameters i.e., maximum limits for moisture content, uric acid content, extraneous matter, other edible grains, defects, weevilled grains, and immature and shrivelled grains, so as to ensure availability of good quality (standardized) millets in domestic and global markets.

e). Coverage of the main consumer protection and trade issues by existing or proposed general standards.

There is no product standard that could serve as a reference for trade quality requirements for these millets and developing standards would help in consumer protection and address trade issues.

f). Number of commodities which would need separate standards

The proposal is to develop standards, specifically for group of millets as listed above.

g). work already undertaken by other international organizations in this field and/or suggested by the relevant international body.

This work will consider in formulating the codex standards.

5. Relevance to the codex strategic objectives

The elaboration of codex standards for these millets is in line with the strategic objective to promote the maximum application of codex standards by countries in their national legislation and to facilitate international trade by protecting the health of the consumers. This proposal is relevant to Codes Strategic Plan 2020-2025, Goal 1 (objective 1.1 &1,2)

6. Information on the relation between the proposed and other existing codex documents

Codex standards for sorghum and pearl millet. The horizontal standards on food safety developed by the Codex general subject committees relevant to foods and/or cereals, will usually apply.

7. Identification of any requirement for and availability of expert scientific advice

Experts on millets will take part via national delegations or observer organizations in Codex.

8. Identification of any need for technical input from external bodies

No need for technical input from external bodies has been identified. If necessary, the relevant organizations will be able to take part in the development of the standard through their status as Codex observers.

9. Proposed timeline

It is suggested that the proposal for the Codex Committee on Cereals, Pulses and Legumes to take on this new project. Development of the standard would be expected to take three years or less, depending on the degree of consensus in discussion of the standard at an international level.