



सत्यमेव जयते

# Quality Control **Manual**

## Nourishing India with Quality Food Grains



Storage & Research(S&R) Division  
Department of Food & Public Distribution  
Ministry of Consumer Affairs, Food & Public Distribution

# **HANDBOOK OF QUALITY CONTROL**

**V 24.01**

**Storage & Research (S&R) Division  
Department of Food & Public Distribution  
Ministry of Consumer Affairs, Food & Public Distribution  
Government of India**

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## ACRONYMS

ACRONYMS	DEFINITION / STANDS FOR
ATR	Action Taken Report
BIS	Bureau of Indian Standards
BRL	Beyond Rejection Limit
CWC	Central Warehousing Corporation
CoA	Certificate of Analysis
DCP	De-Centralized Procurement
FAQ	Fair Average Quality
FIFO	First In First Out
FPS	Fair Price Shop
FSSAI	Food Safety and Standards Authority of India
FR	Fortified Rice
FRK	Fortified Rice Kernel
IMD	India Meteorological Department
ISO	International Organization for Standardization
JTC	Joint Technical Committee
MT	Metric Ton
NABL	National Accreditation Board for Testing and Calibration Laboratories
OWS	Other Welfare Schemes
PDS	Public Distribution System
QA	Quality Assurance
QC	Quality Control
SAARC	South Asian Association for Regional Cooperation
SOP	Standard Operating Procedures
SWC	State Warehousing Corporation
TPDS	Targeted Public Distribution System
URS	Under Relaxed Specifications

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## GLOSSARY

<b>Blending Efficiency Test (BET)</b>	It is a test to validate the effective mixing of FRK and custom milled rice.
<b>Bulk Sample</b>	Quantity of grains obtained by combining & mixing the increments taken from specific lot.
<b>Code of practice</b>	Define/ laid down procedure to ensure safe foodgrain for public distribution.
<b>Consignment</b>	Physical quantity of grains dispatched or received at one time. It should be considered in lots not exceeding 500 MT.
<b>Food</b>	Any substance consumed to provide nutritional support for the body. It is usually of plant or animal origin, and contains essential nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals. The substance is ingested by an organism and assimilated by the organism's cells in an effort to produce energy, maintain life, or stimulate growth.
<b>Food safety</b>	Assurance that food is acceptable for human consumption according to its intended use.
<b>Fortificants</b>	The nutrients added to the food for enrichment purpose.
<b>Fortification</b>	The process of adding nutrients, such as micronutrients or macronutrients, to food. It can be a commercial choice to provide extra nutrients in a food, or sometimes it is a public health policy which aims to reduce incidence of dietary deficiencies in a population.
<b>FRK</b>	Artificially prepared kernels having ingredients of Fe, Folic Acid and Vitamin B12 in specified quantity.
<b>FR</b>	Fortified rice
<b>Laden</b>	Term to describe a partly or completely full state, as for wagon, lorry, barge or ship.
<b>Increment</b>	Small equal quantity of grain taken from each individual sample point in the lot, throughout the full depth of the lot.
<b>Lot</b>	A specific quantity of material produced in a process or series of processes so that it is expected to be homogeneous within specification.

	limits and time. In the case of continuous production, a lot may correspond to a defined fraction of the production. A lot size may be defined either by a fixed quantity or the amount produced in a fixed time interval. A lot may also be a stated portion of the consignment whose quality is to be assessed.
<b>Quality Control (QC)</b>	A series of checks and control measures that ensures that a uniform-quality food is produced.
<b>Shelf life</b>	The length of time before a food product can be stored on a shelf or in warehouses or retail outlets without any change in color, flavour, texture, sensory parameters and / or microbial spoilage making it unfit for consumption.
<b>Standard Operating Procedures (SOP)</b>	Any manufacturing practice following accepted and approved operational steps/norms for that process.
<b>Specification</b>	A brief description about the process or product followed by the list of tests, references to analytical procedures, and appropriate acceptance criteria which could be numerical limits, range or other criteria for the tests described. It establishes the set of criteria to which a material should conform to be considered acceptable for its intended use. "Compliance to specification" means that the material, when tested according to the listed analytical procedures, meets the listed acceptance criteria.
<b>Toxic</b>	Harmful to human, animal or plant health.

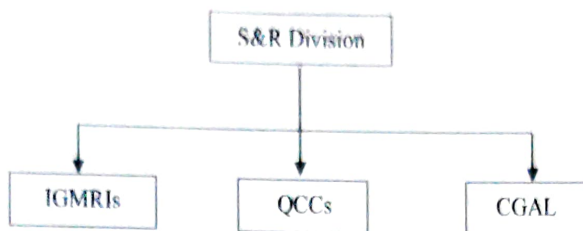
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## CHAPTER -1

### INTRODUCTION AND BRIEF HISTORY OF STORAGE & RESEARCH DIVISION

1. The Food Department was established in December, 1942 under the Commerce Member of the Governor General's Council, which was later re-designated as the Ministry of Food in 1947.
2. During 1951, the Ministry of Agriculture was combined with the Ministry of Food to constitute the Ministry of Food & Agriculture, for greater administrative efficiency and economy. Thereafter, in 1960, the Ministry was divided into two departments, namely the Department of Food and the Department of Agriculture.
3. The Department of Food was given the responsibility of coordination, planning and guidance of National Food Policy, procurement of foodgrains for civil and military requirements, distribution of imported foodgrains to States and regulation of import and export of foodgrains.
4. In 1965, through the Food Corporation Act, 1964, the Food Corporation of India (FCI) was set up under the Department, when the country was facing a major shortage of food grains, especially wheat.
5. In 2000, the Ministry of Consumer Affairs & Public Distribution was renamed as the Ministry of Consumer Affairs, Food & Public Distribution, with two departments, namely the Department of Food & Public Distribution and the Department of Consumer Affairs, which is continuing till date.
6. The Storage and Research (S&R) Division functioning under the direct control of the Department of Food & Public Distribution is engaged in the field of Post-Harvest Management of foodgrains.
7. In 1978, through the decision of the Cabinet Secretariat, the S&R Division has been mandated to monitor the quality aspects of foodgrains during the procurement, storage and distribution handled by the Food Corporation of India and other agencies. The division also addresses the complaints and representations received from the citizens seeking redressal of their grievances about the quality of foodgrains.

8. At present, the S&R Division functions through its three sub-divisions to cover various aspects of quality management of foodgrains at different levels.



9. **Indian Grain Storage Management and Research Institute (IGMRI):** In 1958, to develop modern storage techniques, Grain Storage Research and Training Centre was established at Hapur (Uttar Pradesh), which was later renamed as "Indian Grain Storage Management and Research Institute (IGMRI)" in 1996. It is headquartered in Hapur and has two (2) field stations located at Hyderabad and Ludhiana. IGMRI and its two field stations which have developed a code of practices for the scientific storage of foodgrains.

9.1 The IGMRI and its field stations are established for conducting intensive studies on the problems of handling and storage of wheat, paddy, rice, millets, etc in different agro-climatic zones of the country, predominantly suited to these commodities.

9.2 The institutes conduct applied Research & Development activities on various aspects of post-harvest management of foodgrains. The quality of foodgrain is also monitored by analyzing samples for physical parameters along with the analysis of contaminants, such as pesticide residues and mycotoxins. The Laboratory at IGMRI Hapur has received NABL accreditation as per ISO/IEC 17025:2017 since 2019.

9.3 To enhance the capacity building in the quality management of the foodgrains, long-term and short-term training programs on scientific storage and inspection of foodgrains are organized for the officers/personnel from various organizations viz. FCI, CWC, SWCs, State Civil Supplies Corporations, Private sector etc; and persons engaged in pest control operations.

10. **Quality Control Cells (QCCs):** At present, there are eleven Quality Control Cells located at Kolkata, Hyderabad, Bengaluru, Bhopal, Bhubaneswar, Lucknow, Pune, Patna, Chennai and Guwahati with its headquarter at Krishi Bhawan, New Delhi, functioning under the S&R Division.

10.1 The main objective of these cells is to ensure that the quality of foodgrains is as per the specifications prescribed by BIS, at the time of procurement, storage and distribution. The



officers of these cells conduct Periodic (Monthly) and Surprise inspections at Food Storage Depots of FCI, CWC, SWCs, and the State agencies/Fair Price Shop (FPS)/Rice Mills/Fortified Rice Kernel Manufacturing Units/Premix Manufacturing Units/Rail head Truck Head/Mandies/Procurement centre etc. These cells formulate various policies/Sops for the quality management of foodgrains. They also ensure that the guidelines/instructions regarding proper storage, preservation and maintenance of foodgrains are being followed by the procuring and storing agencies.

10.2 Further, these cells attend to various complaints received from the Elected Representatives, VIPs, State Governments, media and consumers about the quality of foodgrains. In addition to this, the DFPD may conduct surprise check to ensure the prescribed level of micronutrients in Fortified rice at any stage to address any complaints/grievances/references. Discrepancies/shortcomings noticed during inspection investigations are communicated to the concerned authorities for taking remedial measures including action against the delinquents under intimation to the Ministry followed by a deduction in the subsidy for quantity found unfit for the human consumption. In addition to this, the DFPD may conduct surprise check to ensure the prescribed level of micronutrients

**11. Central Grain Analysis Laboratory (CGAL):** The Laboratory (CGAL) was established in 1945 to cater to the need of analyzing samples of foodgrains. CGAL works as a referral lab of India as well as SAARC member countries. Earlier, the laboratory was located at Krishi Bhawan, New Delhi till 2022 and is now re-located to National Test House Premises, Ghaziabad, Uttar Pradesh.

11.1 It is an appellate laboratory for testing of the physical parameters in foodgrains like Wheat, Rice, Paddy, Bajra, Jowar, Millets & other grains for various procuring and consuming agencies. It is also an authorized lab for CBI, SIT & Court case samples, and a designated referral lab in case of disputes in acceptance of custom-milled rice consignment between the FCI and the State agencies/ rice millers.

11.2 The CGAL is committed to ensure the quality and safety of the products tested in the Laboratory and the main functions are as under:

- a. Laying down quality standards and issuing Uniform Specification of foodgrains for procurement under the central pool every year for Rabi Marketing Season (RMS) & Kharif Marketing Season (KMS) keeping in view the interest of producers, consumers and provisions under the Food Safety and Standards Act.

- b. Classification and assessment of rice/paddy/wheat/coarse grain/ pulses varieties for fixation of procurement and price issues.
- c. Assessment of the quality of foodgrains that are imported and/or exported as per the contractual specifications.
- d. Assessment of the quality of foodgrains that are procured, stored and distributed by the Food Corporation of India, CWC, SWC and Other State Agencies in DCP as well as Non-DCP States.

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## CHAPTER - 2

### TERMINOLOGY USED FOR FOODGRAINS

In order to bring the uniformity, all the terms related to quality of foodgrains as defined by Bureau of Indian Standards (BIS) [IS 2813:1995 & IS 2813:2019; Terminology: Food Grains] and which are being updated from time to time and is *re-produced* as under

#### 1. Foodgrains

Foodgrains shall be whole or broken kernels of cereals, millets and pulses meant for human consumption.

- 1.1 Cereals: Foodgrains of monocotyledonous origin
- 1.2 Millets: Foodgrains of monocotyledonous origin and roundish in shape.
- 1.3 Pulses: Foodgrains obtained from legumes.
- 1.4 Dal or Dhal: Split halves of pulses with or without husk.

#### 2. Refractions

All components in foodgrains which differ from sound grains.

##### 2.1 Foreign Matter

Foreign Matter includes inorganic and organic matter. The inorganic matter shall include sand, gravel, dirt, pebbles, stones, glass and metallic pieces, lumps of earth, clay and mud. Organic matter shall include husk, chaff, straw, weed seeds and other inedible grains. Paddy shall be considered as foreign matter in commodities other than paddy.

##### 2.2 Other Foodgrains

Foodgrains other than the grain under consideration.

##### 2.3 Varietal Admixture

The presence of a variety of the same grain other than the variety in consideration.

##### 2.4 Shrivelled/Immature

Kernels or pieces of grain kernels that are not fully developed.

##### 2.5 Brokens

Pieces of sound kernels that are less than three-fourth of the size of the full kernels.

###### 2.5.1 Big brokens in rice

Those pieces of rice kernel which are smaller than three-fourths and upto one-half of the average length of the unbroken kernel.

### **2.5.2 Medium broken in rice**

Those pieces of rice kernels which are smaller than one-half and upto one-quarter the average length of the unbroken kernel.

### **2.5.3 Small broken in rice**

Those pieces of rice kernels which are smaller than one-quarter the average length of the unbroken kernel, retained on 1.10 mm IS Sieve.

### **2.5.4 Longitudinally broken grains in rice**

Kernels or pieces of rice kernels that are split/broken lengthwise.

### **2.5.5 Bursted grains in rice**

Kernels or pieces of rice kernels having developed cracks/rupture on the endosperm during parboiling process.

## **2.6 Damaged**

Kernels or pieces of kernels that are sprouted or internally damaged as a result of heat, moisture, weather or microbes.

## **2.7 Pinpoint Damaged**

Kernels or pieces of kernels having minute black spot of pin point size.

## **2.8 Discolored**

Kernels or pieces of kernels that have changed the natural color as a result of deteriorative changes superficially.

## **2.9 Insect Damaged Grains**

Kernels that are partially or wholly bored or eaten by stored grain insect pests but do not cover germ eaten grains.

## **2.10 Germ Eaten Grains**

Kernels in which only germ part has been eaten/destroyed by stored grain insect pests.

## **2.11 Egg Spotted Grains**

Kernels where insects have laid eggs glued to the outer surface of the grains and these are visible in case of pulses.

## **2.12 Weeviled Grains**

Weeviled grains are grain kernels that are partially or wholly bored by insects injurious to grain but do not include germ-eaten grains and egg-spotted grains.



### **2.13 Kernels with Husk**

Kernels or pieces of kernels carrying husk on one-sixteenth or larger portions.

### **2.14 Dehusked Grains**

Kernels, whole or broken which have more than one-fourth of the surface area of the kernels covered with bran.

### **2.15 Slightly Damaged or Touched Grains**

Kernels or pieces of kernels that are damaged or discolored, superficially so as not to affect the quality of the material.

**2.16** In case of rice, the following also constitute additional refractions.

#### **2.16.1 Chalky**

Kernels or pieces of kernels of which at least half the portion is opaque, milky white in color and brittle in nature.

#### **2.16.2 Red Grains**

Kernels or pieces of kernels in which other than red varieties having more than one-fourth of the surface covered with red cuticle.

#### **2.16.3 Fragments**

Pieces of kernels that are less than one-eighth of the size of the full kernels.

#### **2.16.4 Degree of milling**

Extent to which bran exclusive of germ portion is removed.

### **2.17 Test Weight (Hectolitre Weight)**

The weight of hundred litres of the commodity after removal of foreign matter.

### **2.18 Dockage**

Non-foodgrain material which is possible to remove by cleaning devices or by sieving through an appropriate sieve.

### **2.19 Moisture**

The loss in mass caused as a result of heating for two hours at 130°C to 133°C under specified conditions and expressed as percentage.

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## CHAPTER - 3

### UNIFORM SPECIFICATIONS / FAIR AVERAGE QUALITY (FAQ) NORMS OF FOODGRAINS

Every year, before the commencement of Rabi Marketing Season (RMS) and Kharif Marketing Season (KMS), the Department of Food & Public Distribution (DFPD) formulate/issues Uniform Specifications of foodgrains procured under central pool. All procuring agencies are required to procure foodgrains strictly conforming to the Uniform specifications.

#### 1. Uniform Specification of Indian Wheat (All Varieties) For Rabi Marketing Season (RMS 2024-25):

Wheat shall:

1. be the dried mature grains of *Triticum vulgare*, *T. compactum*, *T. sphaerococcum*, *T. durum*, *T. aestivum* and *T. dicoccum*.
2. have natural size, shape, color and lustre.
3. be sweet, clean, wholesome and free from obnoxious smell, discoloration and admixture of deleterious substances including toxic weed seeds & all other impurities except to the extent indicated in the schedule below.
4. not have any admixture of *Argemone mexicana* and *Lathyrus sativus* (Khesari) in any form, coloring matter, or any obnoxious, deleterious, and toxic material.
5. be in sound merchantable condition and the procurement of the foodgrain commodity under central pool shall be carried out as per the schedule of specifications given below.

#### SCHEDULE OF SPECIFICATION

SI No.	Refractions	Maximum Limits (%)
1.	Foreign matter	0.75
2.	Other foodgrains	2.00
3.	Damaged grains	2.00
4.	Slightly damaged grains	4.00
5.	Shrivelled & Broken grains	6.00
6.	Weevilled grains	1.00
7.	Moisture content	12.00

NOTE:

- a) In case of deviation in Moisture content over 12% and up to 13%, the stock shall be procured with a value cut of 1% on full value of MSP ( $1/100 \times 1 \times \text{MSP}$ ) and for over

- 12% and up to 14% shall be procured with a value cut of 2% on full value of MSP (100 x 2 x MSP). Stocks containing moisture over 14% are to be rejected.
- b) Within the overall limit specified for foreign matter, the poisonous weed seeds shall not exceed 0.4% of which Dhatura and Akra (*Vicia* species) shall not be more than 0.025% and 0.2% by weight respectively.
- c) Kernels with glumes will not be treated as unsound grains during physical analysis; the glumes will be removed and treated as organic foreign matter.
- d) Within the overall limit specified for damaged grains, ergot-affected grains shall not exceed 0.05 %.
- e) In case of stocks having a living infestation, a cut at the rate of Rs. 2 per quintal may be charged as fumigation charges.
- f) For weevilled grains determined by count, stocks containing weevilled grains in excess of 1% will be rejected. The rate of cut for weevilled grains will be Rs. 2 per quintal.

**Method of Analysis:** As given in Chapter 5.

**Definitions of Refractions:** As contained in Chapter 2.

## 2. Uniform Specification of Barley for Rabi Marketing Season (RMS 2023-24):

Barley shall:

- 1) be the dried mature grains of *Hordeum vulgare*.
- 2) have uniform size, shape and color.
- 3) be sweet, clean, wholesome, and free from obnoxious smell, discoloration, admixture of deleterious substances & all other impurities except to the extent indicated in the schedule below.
- 4) not have any admixture of *Argemone mexicana* and *Lathyrus sativus* (Khesari) in any form, coloring matter, pesticide, or any obnoxious and toxic material.
- 5) be in sound merchantable condition and the procurement of the foodgrain commodity under central pool shall be carried out as per the schedule of specifications given below.

### SCHEDULE OF SPECIFICATION

S. No.	Refractions	Maximum Limits (%)
1.	Foreign matter	0.75
2.	Other foodgrains	5.00
3.	Damaged grains	3.00
4.	Slightly damaged & touched grains	8.00
5.	Immature & Shrivelled grains	8.00

6.	Weevilled grains	1.00
7.	Moisture content	12.00

**NOTE:**

- Within the overall limits of foreign matter, the poisonous weed seeds shall not exceed 0.5%, of which Dhatura and Akra (*Vicia* species) shall not be more than 0.025% and 0.2 % by weight respectively.
- In case of deviation of Moisture content over 12% and up to 13%, the stock shall be procured with a value cut of 1% on full value of MSP ( $1/100 \times 1 \times \text{MSP}$ ) and for over 12% and up to 14% shall be procured with a value cut of 2% on full value of MSP ( $1/100 \times 2 \times \text{MSP}$ ). Stocks containing moisture over 14% are to be rejected.
- For weevilled grains determined by count, stocks containing weevilled grains over 1% will be rejected. The rate of cut for weevilled grains will be Rs. 2 per quintal.
- In case of stocks having a live infestation, a cut at the rate of Rs. 2 per quintal may be charged as fumigation charges.

**Method of Analysis:** As given in Chapter 5.

**Definitions of Refractions:** As contained in Chapter 2.

### 3. Uniform Specification of Paddy (All Varieties) for Kharif Marketing Season (KMS 2023-24):

Paddy shall be in sound merchantable condition, dry, clean, uniform in color and size of grains, and free from molds, weevils, obnoxious smell, *Argemone mexicana*, *Lathyrus sativus* (Khesari) and admixture of deleterious substances. All Paddy varieties are classified into two Grades i.e. 'A' and 'Common' based on the length and breadth ratio (L:B). If the ratio is greater than & equal to 2.5, then, it is classified as Grade 'A' and if the ratio is less than 2.5, then, it is classified as 'Common'.

#### SCHEDULE OF SPECIFICATION

S.No	Refractions	Maximum Limit (%)
1.	Foreign matter	
	a) Inorganic	1.0
	b) Organic	1.0
2.	Damaged, discolored, sprouted and weevilled grains	5.0*
3.	Immature, Shrunken and shrivelled grains	3.0
4.	Admixture of lower class	6.0
5.	Moisture content	17.0

\* Damaged, sprouted and weevilled grains should not exceed 4%.



**NOTE**

- a) The definitions of the above refractions are to be followed as per Chapter 2 and method of analysis as per Chapter 5.
- b) The method of sampling is to be followed as per Chapter 4.
- c) Within the overall limit of 1.0% for foreign matter the poisonous seeds shall not exceed 0.5% of which Dhatura and Akra seeds (*Vicia* species) are not to exceed 0.025% and 0.2% respectively.

#### 4. Uniform Specification of Grade 'A' & 'Common' Rice for Kharif Marketing Season (KMS 2023-24):

Rice shall be in sound merchantable condition, sweet, dry, clean, wholesome, uniform in color and size of grains. Rice shall also be free from molds, weevils, obnoxious smell, an admixture of unwholesome poisonous substances, *Argemone mexicana* and *Lathyrus sativus* (Khesari) in any form, or coloring agents & all impurities except to the extent in the schedule below.

#### SCHEDULE OF SPECIFICATION

S.No	Refractions		Maximum Limit (%)	
			Grade 'A'	Common
1.	Broken*	Raw	25.0	25.0
		Parboiled/single parboiled rice	16.0	16.0
2.	Foreign Matter**	Raw / Parboiled / single parboiled rice	0.5	0.5
3.	Damaged # / Slightly Damaged Grains	Raw	3.0	3.0
		Parboiled/ single parboiled rice	4.0	4.0
4.	Discolored Grains	Raw	3.0	3.0
		Parboiled/ single parboiled rice	5.0	5.0
5.	Chalky Grains	Raw	5.0	5.0
6.	Red Grains	Raw/Parboiled/Single parboiled rice	3.0	3.0
7.	Admixture of lower class	Raw/Parboiled/Single parboiled rice	6.0	NA
8.	Dehusked Grains	Raw/Parboiled/Single parboiled rice	13.0	13.0
9.	Moisture content @	Raw/Parboiled/Single parboiled rice	14.0	14.0
10.	FRK (Fortified Rice Kernel)@@	In case of procurement of fortified rice stock, 1% of FRK (w/w) should be blended with normal rice stock.		

\* Not more than 1% by weight shall be small broken.

\*\* Not more than 0.2% by weight shall be mineral matter and not more than 0.10% by weight shall be impurities of animal origin.

# Including pinpoint damaged grains.

@ Rice (both Raw & Parboiled/Single Parboiled) can be procured with moisture content up to a maximum limit of 15% with value cut. There will be no value cut up to 14%. Between 14% to 15% moisture, a value cut will be applicable at the rate of full value.

@@ Blending ratio may vary from a range 0.9 to 1.20% by weight in fortified rice subject to satisfying the prescribed micronutrient level as per the CoA of FRK.

**NOTE:**

- The definitions of the above refractions are to be followed as per *Chapter 2* and method of analysis as per *Chapter 5*.
- The method of sampling is to be followed as per *Chapter 4*.
- Broken (Broken Rice) less than  $1/8^{\text{th}}$  of the size of full kernels will be treated as organic foreign matter. For determination of the size of the broken average length of the principal class of rice should be taken into account.
- Inorganic foreign matter shall not exceed 0.2% in any lot, if it is more, the stocks should be cleaned and brought within the limit. Kernels or pieces of kernels having mud sticking on the surface of rice shall be treated as Inorganic foreign matter.
- In the case of rice prepared by pressure parboiling technique, it will be ensured that the correct process of parboiling is adopted i.e. with application of pressure. Proper gelatinization, aeration, and drying before milling should be done so that parboiled rice is free from encrustation of the grains.

**5. Standards of rice for issue to State Governments/UT Administrations for distribution under TPDS and Other Welfare Schemes (OWS)**

**SCHEDULE OF SPECIFICATION**

S.No	Refractions		Maximum limit (%) as per uniform specifications for Grade 'A' & Common (At the time of procurement)	Maximum permissible limit (%) for Grade 'A' & Common (At the time of distribution)
1.	Damaged/Slightly Damaged/Pin-point Damaged Grains	Raw	3	5
		Parboiled/Single Parboiled Rice	4	5
2.	Discolored Grains	Raw	3	7
		Parboiled/Single Parboiled Rice	5	7
3.	Broken	Raw	25	30

		Parboiled/Single Parboiled Rice	16	19
4.	Chalky Grains	Raw	5	5
5.	Red Grains	Raw/Parboiled/Single Parboiled Rice	3	4
6.	Dehusked Grains	Raw/Parboiled/Single Parboiled Rice	13	16
7.	Foreign Matter	Raw/Parboiled/Single Parboiled Rice	0.5	1.0

#### 6. Uniform Specification of Maize for Kharif Marketing Season (KMS) 2023-24:

6.1 The matured grain of maize (*Zea mays*) shall be in the dried form. The grains shall have a uniform size, color, shape and be in sound merchantable condition. The procurement of the foodgrain commodity under central pool shall be carried out as per the schedule of specifications given below.

6.2 Maize grains shall be sweet, hard, clean, wholesome, and free from *Argemone mexicana* and *Lathyrus sativus* (Khesari) in any form, coloring matter, molds, weevil, obnoxious smell, an admixture of deleterious substances, and all other impurities except to the extent indicated in the schedule below:

#### SCHEDULE OF SPECIFICATION

S. No.	Refractions	Maximum Limits (%)
1.	Foreign matter*	1.0
2.	Other foodgrains	2.0
3.	Damaged grains	1.5
4.	Slightly damaged, discolored and touched grains	4.5
5.	Shrivalled & Immature grains	3.0
6.	Weevilled grains	1.0
7.	Moisture content	14.0

\* Not more than 0.25% by weight shall be mineral matter and not more than 0.10% by weight shall be impurities of animal origin.

#### NOTE

- The definitions of the above refractions are to be followed as per Chapter 2 and method of analysis as per Chapter 5.
- The method of sampling is to be followed as per Chapter 4.
- Within the overall limit of 1.0% for foreign matter, the poisonous seeds shall not exceed 0.5% of which Dhatura and Akra Seeds (*Vicia species*) are not to exceed 0.025% and 0.2% respectively.
- The small-sized maize grains, if the same are otherwise fully developed, should not be treated as shrivalled and immature grains.



## 7. Uniform Specification of Ragi for Kharif Marketing Season (KMS) 2023-24:

7.1 The Ragi grains shall be dried matured grains of *Eleusine coracana*. The grains shall have a uniform size, shape and shall be in sound merchantable condition. The procurement of the foodgrain commodity under central pool shall be carried out as per the schedule of specifications given below.

7.2 Ragi shall be sweet, hard, clean, wholesome, and free from molds, weevils, obnoxious smell, *Argemone mexicana* and *Lathyrus sativus* (Khesari) in any form, coloring matter, an admixture of deleterious substances, and all other impurities except to the extent indicated in the schedule below:

### SCHEDULE OF SPECIFICATION

S. No	Refractions	Maximum Limits (%)
1.	Foreign matter*	1.0
2.	Other foodgrains	1.0
3.	Damaged grains	1.0
4.	Slightly damaged grains	2.0
5.	Moisture content	12.0

\* Not more than 0.25% by weight shall be mineral matter and not more than 0.10% by weight shall be impurities of animal origin.

#### NOTE

- The definitions of the above refractions are to be followed as per *Chapter 2* and method of analysis as per *Chapter 5*.
- The method of sampling is to be followed as per *Chapter 4*.
- Within the overall limit of 1.0% for foreign matter, the poisonous seeds shall not exceed 0.5% of which Dhatura and Akara seeds (*Vicia* species) are not to exceed 0.025% and 0.2% respectively.
- Kernels with husk will not be treated as unsound grains. During physical analysis, the husk will be removed and treated as organic foreign matter.

## 8. Uniform Specifications for Minor Millets for Kharif Marketing Season (KMS) 2023-24:

The Uniform Specification of minor millets, namely i.e. Foxtail Millet (Kangani/Kakun), Proso Millet (Chena), Kodo Millet (Kodo), Little Millet (Kutki) and two Pseudo Millets; Buck-wheat (Kuttu) and Amaranthus (Chaulai) for procurement in Central pool is as stated below.



### SCHEDULE OF SPECIFICATION

S.No	Refractions	Maximum Limit
1.	Moisture Content (for whole grains and dehulled grain)	13.0 % by weight
2.	Extraneous Matter	Not more than 1.0 % by weight, of which not more than 0.25 % by weight shall be mineral matter and not more than 0.10 % by weight, shall be impurities of animal origin.
3.	Other edible grains	2.0% (by weight)
4.	Grains with serious defects. (Grain in which the cotyledon has been affected or attacked by pests; grains with very slight traces of mold or decay; or cotyledon staining.)	1.0% (by weight)
5.	Grains with slight defects. (Grains which have not reached normal development; grains with extensive seed coat staining, without the cotyledon being affected; grains in which the seed coat is wrinkled, with pronounced folding or broken grain)	7.0% (by weight)
6.	Weevilled Grains	4% (by count)
7.	Immature and Shrivelled grains	5.0% (by weight)
8.	Uric acid	100 mg/kg

**NOTE:**

This standard applies to the whole or dehulled millets, which shall be free from poisonous, toxic, noxious, or obnoxious seeds and added coloring matter, rodent hair and excreta.

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## CHAPTER -4

### SAMPLING OF FOODGRAINS

Drawing of representative samples is an important and essential part of grain analysis. Samples drawn should be representative of entire stock. The Method of sampling mentioned in this chapter is in accordance to the Bureau of Indian Standard "Method of sampling of Cereals and Pulses" No IS 14818: 2000 (as amended from time to time) & is reproduced as under:

#### 1. General Principles:

- 1.1 At the time of procurement, samples should be taken jointly by representatives of the buyer and seller. However, at the time of storage /dispatch of the stock, sampling should be done in the presence of custodian of the stock.
- 1.2 Samples shall be as representative as possible of the lots from which they are taken. The composition of a lot is seldom uniform, therefore, a sufficient number of increments shall be taken and carefully mixed, thus giving a bulk sample from which the laboratory samples are obtained by successive divisions or otherwise.
- 1.3 Grains which are sea damaged or otherwise damaged in transit, or is out of condition are to be kept separate from the sound grain and are sampled separately. Samples of unsound material shall not be mixed with samples of sound material and shall be identified and quantified.
- 1.4 Special care is necessary to ensure that all sampling apparatus is clean, dry and free from foreign odours.
- 1.5 Sampling shall be carried out in such a manner as to protect the samples, sampling instruments and containers in which the samples are placed, from contamination from rain, dust, etc. If walking on grain cannot be avoided, precautions in the form of protective clothing should be worn to prevent contamination of the grain.

#### 2. Method of taking samples:

Unless otherwise specified in the contract, consignments shall be considered in lots of a maximum of 500 tonnes or such part thereof as constitute a single consignment.

- 2.1 **Sampling from bags:** Unless otherwise specified in the contract or unless the practice at the port or elsewhere requires otherwise, increments shall be taken from different parts of a bag( for example top, middle and bottom) by means of a sack/bag spear from the number of bags specified in Table given below:

### Number of bags to be sampled

Number of bags in consignment	Number of bags to be sampled
Upto 10	Each bag
10 to 100	10 taken at random
More than 100	Square root (approx.) of total number, taken according to a suitable sampling scheme.

Pre-packed units are usually transported in outer cases or cartons containing a convenient number of units. The procedure applicable to bags shall be used to determine the appropriate number of outer cases or cartons to be sampled. If the total number of outer cases or cartons in the consignments does not exceed 1000, only one prepacked unit shall be taken from each of the outer cases taken for sampling. Care shall be taken to ensure that a pre-packed unit is taken in a random manner from the entire contents of the outer case or carton for sampling.

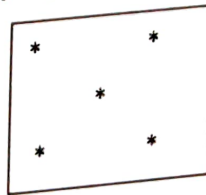
The selection of pre-packed units occupying the same corresponding position in a number of outer cases or cartons shall be avoided. The pre-packed units taken in this manner shall be considered as increments.

## 2.2 Sampling from rail or road wagons, Lorries, barges or ships

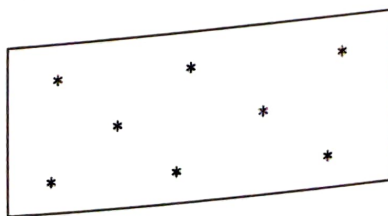
2.2.1 Unless otherwise specified in the contract, each laden wagon, lorry, barge or ship shall be sampled.

2.2.2 Increments shall be taken throughout the whole depth of the lot as per patterns given below.

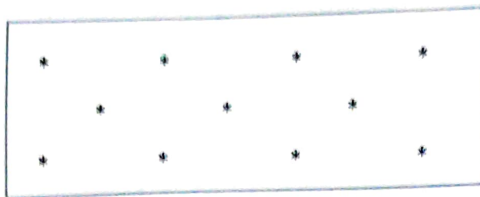
(a) Up to 15 MT- 5 sampling points,



(b) From 15 to 30 MT- 8 sampling points



(c) From 30 to 500 MT.- Minimum of 11 sampling points



(d) More than 500 MT- Take the square root, divide by 2 and round up to next whole number.

If the type of wagon, vessel or commodity does not allow samples to be taken in this manner, or if there is a separate agreement between the buyer and seller, the sampling of grains shall done during discharge of the wagon/vessel.

### 2.3 Sampling from silos, bins or warehouses:

2.3.1 Increments shall be taken throughout the whole depth of the lot. A suitable instrument must be used to achieve this requirement.

2.3.2 If the depth of the lot does not permit use of this method, sampling should be carried out from the flowing cereal in accordance with ISO 6644 (*refer Page no. 62*).

2.3.3 The grain should be sampled using a grid system (as mentioned in 2.2.2)

2.3.4 The number of increments to be taken shall be determined by taking the square root of the tonnage in the static bulk. Divide by two and round up to the next number. This is the minimum number of increments that is to be obtained. For examples more than 1000, 2000, 4000, 6000, 8000 & 10,000 MT, the number of increments would be 16, 23, 32, 39, 45 and 50 respectively.

### 3. Bulk sample:

The bulk sample shall be formed by combining the increments and mixing them thoroughly.

### 4. Laboratory sample:

4.1 Division of bulk sample: Divide the bulk sample to obtain the required number of laboratory samples by coning and quartering or by using one of the sample dividers.

4.2 Number of samples: The number of laboratory samples to be taken for analysis and arbitration shall be specified in the contract or otherwise agreed between the parties concerned.

4.3 Size of sample: The size of the laboratory samples will be determined by the type and requirements of the tests to be undertaken. Generally it is minimum of 1 kg (3kg for milled products).

### 5. Packaging and labeling of samples:



5.1 Packaging of samples: The laboratory samples shall be packed in containers/polythene bags suitable for the purpose, bearing in mind the tests to be undertaken. The containers, Polythene bags shall be completely filled and the closer shall be sealed to prevent loosening or tampering.

5.2 Labels for samples: If paper labels (Sample Slip) are used for the samples, they shall be of a suitably high quality for the purpose. If there are eyelet holes on the labels, these shall be reinforced. If the grain has high moisture content, then special moisture-resistant labels shall be used. A duplicate label may be included in the sample container provided that the sample is not intended for the determination of moisture content or the content of some other ingredients. The information written on the labels or directly on the bags, shall be indelibly marked, using a marker which will not cause any odour in the sample. The information shall include the following:

- (a) Origin of the product.
- (b) Identification number of ship, wagon or lorry.
- (c) Point of departure.
- (d) Date and point of receiving (if applicable).
- (e) Destination.
- (f) Date of arrival at the destination,
- (g) Quantity of consignment
- (h) Bulk, or bagged (including number of bags)
- (i) Type of goods
- (j) Lot number
- (k) Name of seller
- (l) Name of buyer
- (m) Contract number and date.
- (n) Date of sampling
- (o) Date of final discharge
- (p) Place and point of sampling
- (q) Name of person who carried out sampling
- (r) Reason for sampling
- (s) Number of duplicate sample taken.

## 6. Dispatch of samples:

Laboratory samples shall be dispatched as soon as possible, or at time to be fixed in the contract. Whenever possible, samples should be kept and transported at a temperature below 15 degree Celsius, out of direct sunlight and in a non-humid location.

#### **7. Sampling report:**

If a sampling report is prepared, besides giving the usual information it shall make reference to the condition of the grain sampled, including signs of insect, mite or rodent infestation visible at the time of sampling in the warehouse or silo, or during work carried out on the vessel or the other carrier during sampling.

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## CHAPTER – 5

### PROCEDURE FOR ANALYSIS OF FOODGRAINS

Foodgrain samples are analyzed for physical parameters by following the procedure given in the BIS standards i.e. IS 4333(Part 1):2018 and IS 4333(Part 2): 2017 and which are being updated from time to time and is re-produced as under:

#### 1. Determination of Moisture Content

- Place a clean, dry aluminum dish in a hot air oven and allow to dry it for about two hours. Remove from the oven and allow it to cool in a desiccator.
- Weigh the empty cooled dish and place about 5gm of the sample in it. Weigh nearest to mg of the weight in a Precision balance with readability of at least 1 mg.
- Place the dish with sample, after removing the cover in a Hot Air Oven, which has been previously maintained at 130-133°C for 2 hours.
- Replace the cover and place the dish in desiccators and allow cooling.
- Weigh the dish, nearest to the mg and record the weights.
- The process has to be repeated till linearity is observed

Calculation:

$$\text{Moisture \%} = \frac{W1-W2}{W1-W} \times 100$$

Where W= Weight of the empty dish

W1= Weight of the dish with sample before drying

W2= Weight of the dish with sample after drying

#### 2. Visual Examination

Examine the test sample as a whole for its general condition, including odour and infestation and report whether the sample is wholesome, clean, dry and in sound market condition. Examine the sample for any deleterious material hazardous to human health rendering the grain inedible.

#### 3. Determination of Foreign Matter

3.1. For foodgrains other than rice and millets, weigh about 500g of the test sample and record the prescribed mass. In the case of rice and millets a test sample of about 250 g should be taken.

3.2. The mass of the sample should be recorded. Pour the quantity over the set of sieves arranged in a way so that the sieve with the largest perforations comes at the top and those



with smaller perforations are placed in the order of their sizes. Then agitate the sample thoroughly to strain out the foreign matter at various levels. As a result of this straining, other foodgrains and foreign matter like bolder pieces of clay, chaff etc would remain on the first three sieves according to their sizes. The topmost sieve would contain bold grains, big pieces of clay and other big sized foreign matter, while the lower sieve would contain smaller, shriveled and badly insect infested grains and smaller foreign matter. Separate the sieves after straining and pick up all foreign matter by hand or forceps from each of them and add it to the foreign matter collected on the bottom pan. Weigh the total foreign matter of the bottom pan and calculate the percentage.

#### 4. Refractions other than Foreign Matter and insect damaged grains

4.1. Mix the contents of the four sieves free of any foreign matter together and spread out evenly on flat smooth surface in a circular layer of about 6mm-10mm thickness. From this spread, take exactly the specified quantity required for analysis for the grains under test (Table 4.1) from different sides and the middle (at least 9 places) by means of small scoops as shown in Figure below.



4.2. Place the weighed quantity on an enamelled plate. Then pick out with the help of a magnifying glass, if necessary, various items of refractions, other than foreign matter, in the order given in table 4.2, care being taken that each refraction is accounted for only once. Separate those refractions from the weighed sample and weigh on the physical balance. Calculate the percentage of various individual refractions separately on the quantity taken for actual analysis.

4.3. For the refractions other than foreign matter in rice, carry out the analysis in duplicate and report their average.



**Table 4.1 - Quantity of sample to be taken for determining refraction other than Foreign Matter as per IS 4333(Part 1):2018 and IS 17780:2021\***

Sl No.	Foodgrain	Mass (in g), Min
i.	Wheat	50
ii.	Maize	50
iii.	Paddy	25
iv.	* Fortified Rice (refer to page 62)	25-50
v.	Barley	50
vi.	Gram	50
vii.	Other pulses	25
viii.	Millets	20

**Table 4.2 - Order in which refractions should be separated from the weighed sample as per IS 4333(Part 1):2018**

S.No	Refractions
i.	Other foodgrains
ii.	Damaged
iii.	Discolored
iv.	Weevilled grains
v.	Insect damaged
vi.	Fragments
vii.	Broken
viii.	Chalky (in case of rice)
ix.	Red Grain
x.	Kernels with husk
xi.	Shrivelled or immature
xii.	Varietal admixture
xiii.	Pin point damaged
xiv.	Germ eaten grain
xv.	Egg spotted grains

## 5. Insect Damaged Grains/ Weevilled Grains

### 5.1 For Bigger size grains

From the sieved sample after sieving foreign matter, measure 20ml of the representative sample with the help of a measuring cylinder. Place the measured sample on a sample plate and count the total number of grain kernels. The insect damaged weevilled grains shall be picked out separately and counted. The insect damaged weevilled grains present in the sample shall be calculated as follows:

Insect damaged/weevilled grains, % by number =

$$\frac{\text{Insect Damaged / Weevilled Grains in 20ml sample}}{\text{Total Grains in 20 ml sample}} \times 100$$

## 5.2 For smaller sized grains

There are two methods and either of them could be used. The method used shall be declared while reporting the result.

### 5.2.1 Volumetric method

From the sieved sample after sieving foreign matter measure 20ml of the representative sample with the help of a measuring cylinder. Place the measured sample in a sample plate and pick up the Insect damaged/ weevilled grains separately. Measure its volume in the same measuring cylinder which was used for measuring the representative sample and calculate as follows:

Insect damaged/weevilled grains, % by volume=

$$\frac{\text{Volume in ml of Insect Damaged / Weevilled Grains}}{20} \times 100$$

### 5.2.2 Weight Method

From out of the sieved sample after sieving foreign matter, weigh accurately 20g of the representative sample in a chemical balance with a least count of 0.1mg. Carefully transfer the sample to a sample plate and separate the Insect damaged/ weevilled grains and weigh it accurately in the sample chemical balance. Care shall be taken while doing the experiment to avoid any external factors like strong wind etc. affecting the experiment, the calculation shall be done as follows:

Insect damaged/weevilled grain, % by mass=

$$\frac{\text{Mass in g of Insect damaged / weevilled grain}}{\text{Mass in g of representative sample}} \times 100$$

## 6. Determination of Dehusked Grains

The definition of the above refractions and method of analysis are to be followed as given in the Bureau of Indian Standard “Method of analysis for Foodgrains” No’s IS 4333 (Part-I):2018 & IS 4333 (Part- II): 2017 and “Terminology for Foodgrains” IS 2813-2019 as amended from time to time. Dehusked grains are rice kernels whole or broken which have more than  $\frac{1}{4}$ <sup>th</sup> of the surface area of the kernel covered with the bran and determined as follows:

### 6.1 Analysis Procedure:

Take 5 grams of rice (sound head rice and broken) in a petri dish (80×70 mm). Dip the grains in about 20 ml of Methylene Blue solution (0.05% by weight in distilled water) and allow about one minute. Decant the Methylene Blue solution. Give a swirl wash with about

20 ml of dilute hydrochloric acid (5% solution by volume in distilled water). Give a swirl wash with water and pour about 20 ml. of Metanil Yellow solution (0.05% by weight in distilled water) on the blue stained grains and allow to stand for about one minute. Decant the effluent and wash it with fresh water twice. Keep the stained grains under fresh water and count the dehusked grains. Count the total number of grains in 5 grams of sample under analysis. Three broken are counted as one whole grain.

## 6.2 Calculations:

$$\text{Percentage of Dehusked grains} = \frac{N}{W} \times 100$$

N = Number of dehusked grains in 5 grams of sample

W = Total grains in 5 grams of sample.

## 7. Determination of Age of Milled Raw Rice

As per the policy of Govt. of India for acceptance of rice in the central pool, consignments are accepted from the State Government Agencies as well as Rice Millers. As per the instructions, a uniform-size of lot i.e. 29 MT (580 bags) is offered by the millers at depot points. The consignments are accepted after necessary analysis as per the procedure stipulated under IS 4333 with up-to-date amendments. Further, mixed indicator test is conducted for determination of age of milled raw rice stocks.

### 7.1 Implementation & Method of analysis:

As per instructions in vogue, a sample shall be drawn from the offered consignment and analyzed in terms of FAQ specifications of DFPD. If it is found to conform to the prescribed specifications, the samples will be tested through the Mixed Indicator Method. In case the color of the reagent turns out to be green/avocado green, the consignment would be accepted and any other color like yellow, yellow orange & orange would be rejected terming the stock as 'Not freshly Milled'.

### 7.2 Materials & Equipment:

#### (A) Glassware:

1. Volumetric flasks, amber colored 2 no's of 200ml each
2. Graduated measuring Cylinder (100ml)
3. Beaker
4. Test tube with stopper (5 no. of 25 ml)



5. Glass stirrer
6. Measuring pipette (2ml)

**(B) Apparatus:**

1. Balance with 0.01 gram accuracy
2. Test tube rack

**(C) Chemical Reagents:**

1. Methyl red, analytic reagent (0.05 gram/depot)
2. Bromothymol blue, analytic reagent (0.15 gram/depot)
3. Ethyl alcohol, Absolute Grade (75 ml/ depot)
4. Distilled water (10.00 litre)

**7.3 Preparation of stock solution:**

1. Weigh 0.05 grams of methyl red and 0.15 grams of bromothymol blue.
2. Dissolve the above indicators in 75 ml ethyl alcohol and add distilled water to make 100 ml.
3. Store in a cool and dark place and in an amber-colored flask.

**7.4 Preparation of a working solution:**

Take an aliquot of stock solution and dilute it with distilled water in a volume ratio of 1:50. The prepared solution preferably is to be consumed on the same or the next day. Accordingly, a working solution is to be prepared keeping in view the number of raw rice samples to be tested.

**7.5 Procedure for staining method using pH indicators (working solution):**

1. Weigh 5 grams of the raw rice sample.
2. Place the sample in the test tube.
3. Add 10 ml of pH indicator (working solution) and shake well for one minute.
4. Note the resulting color of the solution (whether green/avocado green/yellow/yellow-orange/orange).

**7.6 Interpretation of Test Results:**

Samples subjected to mixed indicator method	Color Change	As per standards	Result
	Green	Freshly milled stocks	Accepted
	Avocado Green	Old Stock	Not to be accepted
	Yellow		
	Yellow Orange		
	Orange		

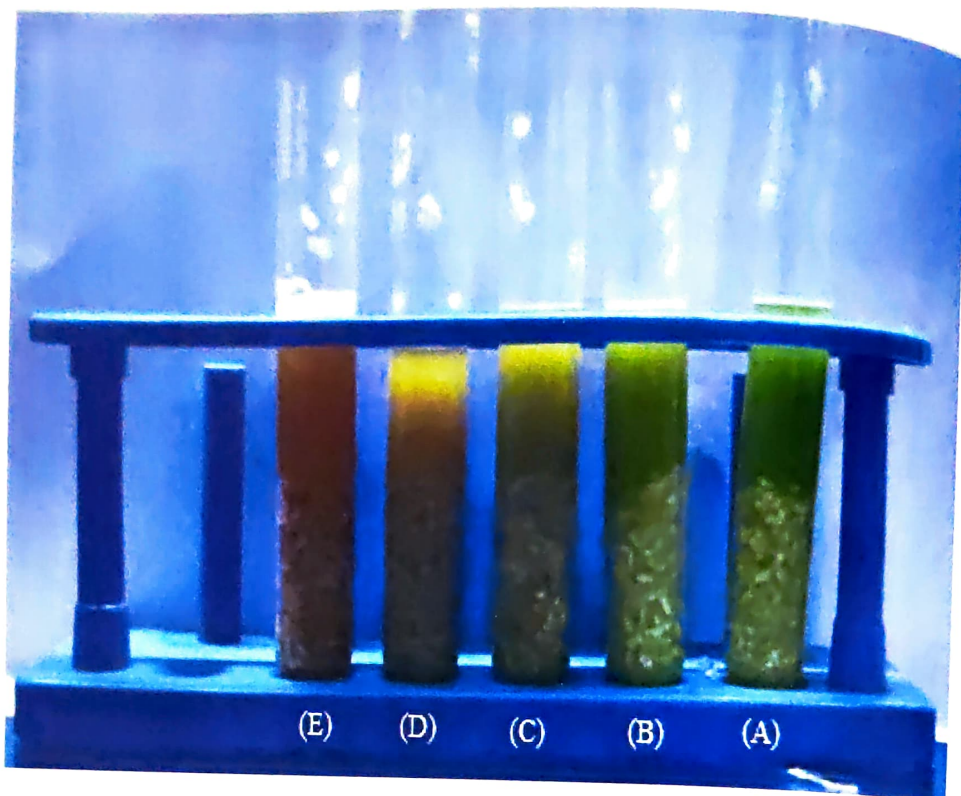


### 7.7 Precaution

1. Keep away the chemicals from the face due to the volatile nature of alcohol
2. Avoid contact with the chemicals from the eye, nose, and skin.

### Appeal Procedure:

Normal appeal procedure would be followed in case of rejection of consignment through this method.



Color Coding for different age groups of rice:

Illustration of color coding in above figure	Age of Rice in Months	The resulting color of the Solution
(A)	0 Month	Green
(B)	1 Month	Avocado Green
	2 Months	Avocado Green
(C)	3 Months	Yellow
(D)	4 Months	Yellow-Orange
(E)	5 Months	Orange
	6 Months	Orange

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## CHAPTER - 6

### MECHANISM OF QUALITY CONTROL OF FOODGRAINS DURING PROCUREMENT, STORAGE AND DISTRIBUTION

#### 1. PROCUREMENT

1.1 The Uniform Specifications are circulated to the Food Corporation of India (FCI), all the State Governments and their agencies with the instructions to ensure that the foodgrains should be procured strictly conforming to these Uniform Specifications only.

1.2 The State Governments/the FCI shall facilitate the purchase/procurement centers with the following essential facilities/equipment to ensure the quality of the foodgrains that are being procured:

##### (a) Infrastructure Facilities:

- Electric fans/ *Jharnas* for cleanings.
- Tarpaulin sheets for drying.
- Wooden crates to avoid moisture transmission.
- Polythene covers to protect from unseasonal rain etc.
- Polythene/cloth bags for sampling.

##### (b) Quality Test Equipment:

- Duly calibrated moisture meters.
- Analysis Kit (Poker, Sample divider, Weigh balance, Sieve set, Enamel plate, scoop etc).

1.3 The quality of gunnies used for packing of foodgrains along with color coding (Blue/Green/Red) of gunny bags to facilitate the identification of respective crop year of stock (for example BLUE color coding for gunny bags for RMS 2024-25 as issued by the Policy Division of DFPD *vide* letter No.-15(1)/2012-Py-III (367559) dated 26.09.2023) should also be checked. The Quality Control Officers of the FCI and the State Governments shall monitor the quality of foodgrains at the time of procurement.

#### 2. STORAGE

2.1 The procured foodgrains are to be stored as per the following Scientific Code of Practices for safe storage of foodgrains:

- a) Godowns shall be constructed on the scientific lines as prescribed by BIS standard IS 16144:2014 (*refer Page No. 62*).

- b) Before the stocks are stored, the godowns are to be cleaned.
- c) Stack lines are to be provided in each godowns for stacking.
- d) Dunnage materials, such as wooden crates, bamboo mats, polythene sheets are used during storage to check the migration of moisture from floor.
- e) The floors and walls of the godowns are to be treated with Malathion 50% EC to check the insect infestation before storage of foodgrains.
- f) Regular identification & repair of all the leakage/seepage points, cleaning of drainages in the godown premises and rat control measures.
- g) Prophylactic (spraying of insecticides) and curative treatments (fumigation) are to be carried out in godowns for the control of stored grain insect pests.
- h) Inspections of the stocks/godowns shall be undertaken by a qualified and trained personnel.
- i) The principle of "First In First Out" (FIFO) is to be followed to the extent possible so as to avoid longer storage of foodgrains.

2.2 The Quality Control Officers of the FCI and the State Agencies shall monitor the quality of foodgrains on regular basis. The details of the inspections and remedial measures are to be displayed on the Stack-Card of each stack (*Fig 5.1*). If any upgradeable/damaged foodgrain stocks are noticed by the concerned agency, the State Government shall immediately constitute a Joint Technical Committee (JTC) under District Manager or any officer as decided by the State Government and shall include two representatives of FCI. Area Manager of FCI will nominate such representative (*refer Annexure-I at Page No.56*).

2.3 The JTC will check the quality of such stocks and if the stocks are found to be non-issuable, then, it will decide whether the stocks are upgradable or damaged. The JTC will submit its report to the Competent Authority (i.e. GM, FCI of concerned region) for further necessary action (*refer Annexure-I at Page No.56*).







- d) An officer not below the rank of Food Inspector is to be deputed from the State Government to take delivery of foodgrains stocks from FCI godowns.
- e) It is responsibility of the concerned State Government/UT Administration to ensure that during transportation and storage at different stages in the distribution chain the foodgrains retain the required quality specifications.
- f) The State Government, where the decentralized procurement is in operation should ensure that the quality of foodgrains issued under TPDS and other welfare schemes should meet the standards under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 as amended from time to time.

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## CHAPTER- 7

### RELAXATION IN UNIFORM SPECIFICATIONS/ FAQ NORMS OF FOODGRAINS

1. The FCI & the State Agencies procure the foodgrains strictly conforming to the Uniform Specifications (*refer Chapter 3*) under the Central Pool. However, sometimes due to natural calamities viz. unseasonal rains, erratic rain falls, cyclone and adverse climatic conditions etc., the crop is affected, thereby affecting the quality of foodgrains and thus, foodgrains brought by farmers for sale may not be conforming to the laid down norms of Uniform Specifications.

2. The Department of Food & Public Distribution being part of the welfare state has to take care of the farmers and the beneficiaries of the Targeted Public Distribution System (TPDS) and Other Welfare Schemes (OWS). In this direction, it has to be ensured that due to any deterioration in the quality of the foodgrains because of the natural calamity, the farmer should not be penalized. As a result, relaxations in some refractions of the Uniform Specifications are considered by the Department of Food & Public Distribution to mitigate the hardship of farmers and to avoid distress sale at the request of the State Government/ UT administrations.

3. The occurrence of any such natural calamity affecting the quality of the foodgrains is unique and specific to the agro-climatic conditions of the region, therefore, consideration of relaxation warrants different approaches accordingly. The relaxation is granted as per the assessment of the extent of damage/quality loss in foodgrains. The foodgrains Under Relaxed Specifications (URS) are then procured by the FCI and the State Agencies as per the Standard Operating Procedure given below.

#### A. STANDARD OPERATING PROCEDURE (S.O.P) FOR RELAXATION IN UNIFORM SPECIFICATION OF THE FOODGRAINS

The provisions to assess any request for the relaxation in Uniform Specifications of the foodgrains are as under:

- i. During the occurrence of extreme natural calamity that affects the quality of the foodgrains, the request for relaxation in the Uniform Specifications along with the details of the affected crop, IMD data, etc. as per prescribed format (*at page no.39*) may be submitted to the Department of Food and Public Distribution by the concerned State Government/UT Administration.

- ii. On receipt of the request, a joint team comprising the officers from the DFPD, FCI and the State Government is constituted and deputed to the affected region. The team will be led by DFPD and FCI shall depute Officer at the level of AGM in the Joint Team.
- iii. The Joint Team will complete the survey, sampling and analysis within 4 working days or earlier. After that, the final report of the Joint Team along with the recommendations will be submitted to the DFPD immediately.
- iv. The decision for granting relaxation is taken directly based on the report submitted by the joint team. However, the extent of relaxations for any refraction shall not exceed the maximum limits prescribed by the FSSAI.
- v. The DFPD will finalize the decision on the request for relaxation in the Uniform Specifications following the procedure in-vogue within 2 working days from receipt of the joint committee report.
- vi. There will be relaxation in FAQ specific to the geographical area affected by the natural calamity and as confirmed by the report of the Joint Team.
- vii. There will be **no value cut** on the procurement of URS stock.
- viii. The final decision on the request for the relaxation in the Uniform Specification will be taken by the Competent Authority.
- ix. The quantity of foodgrains procured under relaxed specifications shall be consumed within the State of procurement, up to its allocation for the respective year.
- x. The rest of the URS quantity shall be handed over to the FCI and they should dispose of such URS stock on priority.
- xi. The State Governments and the FCI shall maintain separate storage and records of the procured URS stocks. Further, during liquidation such stocks should be disposed of on priority.
- xii. **No State agency shall procure URS without prior explicit approval of the Department of Food and Public Distribution.** No post-facto approval should be granted to any State for the purchase of stocks under relaxed specifications.

## B. FORMAT OF STANDARD APPLICATION FOR RELAXATION IN UNIFORM SPECIFICATIONS

1. Name of the State
2. Name of the Crop
3. Crop Year
4. Nature of Calamity
5. Approximate area under production
6. Approximate affected area
7. Name of the affected area/district
8. Period for which relaxation is sought
9. IMD Data for period mentioned in point 8
10. Wind Velocity Data for period mentioned in point 8
11. Details of the refraction for which relaxation is sought

Sl No.	Name of the refraction in which relaxation is sought	Existing Limit of the Specification	Limit upto which relaxation is sought

12. Supporting data in respect of relaxation sought
13. Details of the previous relaxations granted by Government of India to the State, if any.

Signature of Competent Authority  
(Concerned Department of the State)

Name:

Designation:

Date:

\*\*\*\*



## CHAPTER -8

### NORMS FOR THE STORAGE GAIN/LOSS OF FOODGRAINS

The Department in consultation with the ICAR, CIPHET Ludhiana has finalized the scientific norms to quantify the gain/losses of procured foodgrains i.e. Wheat/Rice, in central pool during the storage in covered godowns of consuming and procuring region.

2. Wheat, considered a 'living grain', tends to gain some weight during storage. This is known as 'storage gain' and it mostly happens due to absorption of moisture. The loss during storage of rice stacked in a warehouse may take place because of decrease in grain moisture content, reduction in dry matter weight owing to environmental conditions (temperature and relative humidity), operational factors (spillage, sampling, weighing system errors, etc.) and biotic factors (insects, pests, rodents, mycotoxins, etc.).

3. The recording & monitoring of loss/gain statics in respect of factors responsible for affecting loss/gain of foodgrains is mandatory during preservation and at the time of liquidation. However, the final determination of loss/gain can be done only after complete liquidation of a particular stack. The storage gain/loss norms in wheat/rice in consuming and procuring region is to be calculated as per the formulas mentioned under:

1.  $L_c \text{ rice} = 0.819M_i - 0.822M_l + 0.01S_p$  (Rice in Consuming Regions)
2.  $L_p \text{ rice} = 0.737M_i - 0.753M_l + 0.0251S_p$  (Rice in Procuring regions)
3.  $L_c \text{ wheat} = 0.618M_i - 0.627M_l + 0.011S_p$  (Wheat in Consuming regions)
4.  $L_p \text{ wheat} = 0.578M_i - 0.579M_l - 0.007S_p$  (Wheat in Procuring regions)

Where;

$L_c$  = Loss/Gain in Rice in Consuming region

$L_p$  = Loss/Gain in Rice in Procuring region

$M_i$  = Moisture content during stacking

$M_l$  = Moisture content during liquidation

$S_p$  = Storage period in months

4. If any deviation occurs from the norms, each and every case of unjustified losses (i.e. the value beyond the calculation as per the norms), is investigated separately and on the basis of merit of cases, the responsibilities are fixed by concerned procuring agencies on the delinquent staffs through imposing penalties/recoveries.

## CHAPTER - 9

### PROTOCOL FOR MONITORING THE QUALITY OF FOODGRAINS STOCK PROCURED UNDER DECENTRALIZED PROCUREMENT (DCP) SCHEME

#### Inspection of Foodgrains during storage at the level of Procuring Agency:

1. a) The State Government shall put in place a system of inspection of depots/warehouse wherein procurement of FR, wheat, cereals, millets, etc. is carried out by the concerned department of the State.
- b) The minimum frequency of the inspection of various foodgrains by the concerned State Government is as under:
  - i. **Fortified Rice:** The inspection of the procured stock shall be conducted on monthly basis and mill wise stacking may be ensured. Further, it may also ensure that the optimum degree of polish i.e., 5% should be maintained to retain the desired level of nutrients in resultant rice that is used for FR.
  - ii. **Wheat:** The inspection shall cover minimum 50% of the stock procured in the respective Rabi Marketing Season (RMS).
  - iii. **Millets/Other Cereals:** The inspection of the procured stock shall be conducted on fortnightly basis.

#### 2. Inspection of Foodgrains during storage at the level of DFPD:

- a) To facilitate the inspection of stock procured under DCP scheme, DFPD will constitute a Joint team comprising of nominated officers of the Ministry, State Government and the FCI. The team will be led by the Ministry.
- b) The aforementioned Joint Team shall perform a monthly inspection as per the details below.
  - i. The monthly inspection shall be conducted of the total procured stock under DCP scheme.
  - ii. During the inspection of any FCI district, the team shall inspect FR/Wheat/Millets/Other Cereals, etc stock procured in accordance to the scheme mentioned below:
    - 100% upto 1000MT
    - 10% upto 10,000 MT
    - 5% for more than 10,000MT

- iii. In case of routine inspection, the planning of inspection schedule shall be done in such a manner so as to cover the entire Revenue District of the State in a year; however, there may be a gap of six months during visit in a same district. The six months clause shall not be applicable in case of receipt of any complaint regarding quality of food grains in the district.
- iv. The schedule of inspection (routine inspection) shall be intimated to the concerned authorities of the State Government and FCI before the commencement of the inspection. However, in any case, the same may not be communicated to rice millers or any other private agencies.
- c) In case of quality related issues observed by the joint team or during any complaint the joint team may increase the number of visit to the said FCI/Revenue district.
- d) The Regional Office of Quality Control Cell (DFPD) shall submit the outcome of the monthly inspection to the Ministry as far as possible within 15 days of completion of the inspection.
- e) The analysis report submitted by the regional office may be monitored by QCC, Delhi.
- f) In reference to MoU signed between respective State Governments of DCP States and DFPD for the KMS 2015-16 onwards mechanism for "Joint inspection of foodgrains by FCI and State Government procured in DCP states" and FCI letter dated 24.05.2016, the inspection report of the 2% check conducted by the FCI may be shared with the concerned Quality Control Cells of DFPD.
- g) The concerned Quality Control Cells of DFPD shall scrutinize the aforementioned report of the FCI & shall submit the Action Taken Report (ATR) of the same to QCC, Delhi.
- h) The quality report of the samples drawn during inspection by DFPD and check conducted by the FCI shall be one of the mandatory documents for releasing the subsidy to the state government by the Ministry for the respective quarter.
- i) In case of dearth of technically qualified officers in DCP States, the State may make request to FCI to provide such technically qualified officers.

### **3. Provision for stock declared as BRL (Beyond Rejection Limit)**

The foodgrains found beyond the specifications issued by the DFPD is considered as Beyond Rejection Limit (BRL). Such stock shall not be distributed under the Public Distribution System/any other welfare schemes.



## **I) Fortified Rice:**

- a) In case of detection of BRL FR stock (including blending ratio) by the inspecting team, a notice would be issued by the concerned procuring agencies to the miller directing to replace the BRL stock with FAQ stock.
- b) The stock shall be replaced by the defaulting rice miller at their own risk and cost.
- c) The replaced BRL stock shall be verified & certified by a Joint team consisting of nominated officers of the DFPD, the State Government & the FCI. Unless the replaced stock is verified & certified by the Joint team, it will not be issued in the PDS or transported to another place. This procedure of verification and certification of replaced BRL stock shall also be applicable to the stock procured under Non-Decentralized Procurement Scheme.
- d) The entire exercise of replacement of stock by the rice miller shall be completed within 03 months followed by a request of the State Government/Agency for verification and certification by the Joint team. The certification shall be completed as early as possible but not more than two months from the receipt of the request.
- e) The certificate of replacement shall be one of the mandatory documents for the release of subsidy to the State.
- f) The above-mentioned procedure of verification & certification (of replaced stock) shall also be applicable for BRL stock declared by the FCI during its 2% mandatory checks for DCP states.

## **II) Wheat:**

- a) In case of detection of BRL wheat stock by the inspecting team, all stock of wheat containing damaged grains within FSSAI standards shall form a part of upgradable stocks. Such stock shall be upgraded to bring its refractions within FAQ norms.
- b) The upgraded stock of wheat shall be verified & certified by a Joint team consisting of nominated officers of the DFPD, the State Government & the FCI.
- c) The process of upgradation & certification of the BRL wheat stock should be completed as early as possible but not more than two months from the receipt of the request from State Government/Agency.



- d) The certificate of upgradation shall be one of the mandatory documents for the release of subsidy to the State.

**4. Provisions for Non-compliance with FSSAI Limit:**

- a) The foodgrains not found complying with the specifications issued by the FSSAI are known as non-compliant as per FSSAI's limit (non-issuable) and may be considered as Unfit for human consumption.
- b) In case of non-compliant FSSAI stock, the Guidelines for Disposal of Damaged Foodgrains held by State Government and its Agencies may be followed as per *Annexure I at Page No.56*.
- c) The rice miller whose rice stock is found to be non-compliant as per FSSAI limit shall provide fresh FAQ stock of an equal quantity of foodgrains. There is no provision for replacement of such stock. The expenditure involved in entire process would be borne by the defaulting miller. In case such rice miller provides more than 06 lots not complying with the FSSAI Limit in a season, action would be taken against him as per the provision of Food Safety and Standards Act, 2006 as amended from time to time and shall be debarred from milling operations for a season.
- d) It is mandatory for the State Government to clearly mention the penal provisions in its MoU with Rice millers for the supply of non-compliant FSSAI Limit FR/Wheat.

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## CHAPTER – 10

### FORTIFIED RICE

1. Fortification is the practice of deliberately increasing the content of essential micronutrients in a food so as to improve the nutritional quality of food and to provide public health benefit with minimal risk to health. Rice Fortification is done by blending Fortified Rice Kernels (FRK) to normal Rice (Custom Milled Rice) with a blending efficiency of FRK at 1% of FR by weight.
2. Rice, when fortified, shall contain added iron, folic acid and Vitamin B-12 at the level (prescribed by FSSAI) given in the table below:

Sl. No.	Nutrient	Level of fortification per Kg
1.	Iron-(a) Ferric pyrophosphate	28mg- 42.5mg
	Or (b) Sodium Iron (III) Ethylene diamine tetra Acetate Trihydrate (Sodium feredetate- Na Fe EDTA)	14 mg-21.25 mg
2.	Folic acid	75µg-125µg
3.	Vitamin B12-Cyanocobalamine or Hydroxycobalamine	0.75µg-1.25µg

### QUALITY MANAGEMENT PROTOCOLS FOR FORTIFIED RICE KERNEL (FRK) AND FORTIFIED RICE (FR)

#### Level 1: Vitamin & Mineral Premix (VMP) manufacturer

- 1.1 The Vitamin & Mineral Premix (VMP) used for manufacturing Fortified Rice Kernel (FRK) should be strictly in accordance with the “Draft Food Safety and Standards (Food Product Standards and Food Additives) Amendment Regulations w.r.t the standards of Vitamin and Mineral Premix for manufacturing of Fortified Rice Kernels (FRK)”, dated 17.11.2023 (*refer Page No. 62*) and as amended from time to time.

#### Level 2: FRK Manufacturer

##### At the level of Fortified Rice Kernel (FRK) Manufacturer/ Supplier:

- 2.1 FRK manufacturers shall have a FSSAI License/registration.
- 2.2 FRK manufacturer should procure the Premix from FSSAI Licensed Premix Manufacturer/ Supplier.
- 2.3 The chemical compound of the vitamin and minerals premix (VMP), used in FRK

production, should be in accordance with the latest FSSAI guidelines/Standard Operating Procedure for FRK Production.

- 2.4 Certificate of Analysis (CoA) is to be obtained from FSSAI-notified laboratories. CoAs must have a QR code as prescribed by FSSAI containing the information about the lab/testing so that the genuineness of the CoAs can be checked by scanning.
- 2.5 FRK manufacturers shall maintain the batch-wise records of CoAs of Vitamin-Mineral Premix (VMP) used in FRK production in physical format and the corresponding batch of FRK produced and shall upload test reports on the web portal specified by FSSAI for complete audit trail, which can be accessed during the inspections, if required, by FCI, State Government, DFPD and other authorities.
- 2.6 FRK manufacturers shall provide the batch-wise CoAs of FRK and the corresponding batch of VMP to the fortified rice millers while selling FRK.

### **Level 3: Rice Millers Producing Fortified Rice by Blending FRK with Conventional Rice**

- 3.1 The rice miller should have a valid milling license as well as a valid license for manufacturing fortified rice under food category 6.0 of the Indian Food Categorization System (Food Safety & Standards Act, 2006) (*refer Page No. 62*).
- 3.2 The millers should procure FRK from FSSAI licensed/registered FRK manufacturers/Suppliers.
- 3.3 Millers should have a Blending Machine as per the latest standards prescribed by BIS i.e. IS 17854: 2022 (*refer Page No.62*) with an integrated packaging/bagging facility to ensure homogeneous blending of FRK at 1% of FR by weight.
- 3.4 Bags of fortified rice offered for procurement to the procuring agencies must comply with Food Safety & Standards (Labelling and Display) Regulations, 2020 and Food Safety & Standard (Fortification of Foods) First amendment Regulations, 2021(*refer Page No.62*).
- 3.5 The rice millers shall keep a record of CoAs for each consignment of FRK and VMP. Rice millers shall provide the CoA of the FRK batch used and the CoA of the corresponding Premix to the procuring agencies at delivery of each consignment/lot of fortified rice.
- 3.6 During the production of fortified rice, the **Blending Efficiency Test (BET)** should be performed every hour to validate the effective mixing of fortified rice



kernels (FRK) with custom milled rice by preparing a composite sample. The sample should be drawn from 10-15 bags randomly. Proper records of BET may also be maintained.

#### **Level 4: Procurement of Fortified rice by FCI/ State Agencies:**

##### **At the time of Tendering/Empanelment and Formalizing the Contract**

- 4.1 FCI/ State Procuring Agencies should specify all pre-requisites including blending efficiency of FRK at 1% of FR by weight, CoA, FSSAI license etc. of rice millers in their Milling Agreement to ensure uniformity and ease the QA/QC protocols.

##### **At the time of Sourcing Fortified Rice from the Millers**

- 4.2 Fortified Rice consignments are to be checked for physical parameters by quality control personnel of procuring agencies/DFPD as per the existing procedure for analysis of Foodgrains (*refer Chapter 3 and Chapter 5*) and IS 17780: 2021 FR specifications (*refer Page No.62*).
- 4.3 For the purpose of uniformity, it is assumed that scenario 2 in **Appendix I** (given below) shall be followed by the Rice Millers, wherein the mean value (Iron 3525 mg/kg; Folic Acid 10000 µg/kg and Vitamin B12 100 µg/Kg) of the prescribed range of micronutrients in FRK is expected to be ideal. In this scenario, the range from **-10% to +20 % i.e., 0.9 to 1.2 shall be permitted blending ratio.**  
However, if the sample fails on account of blending, an opportunity would be given to Rice Millers to bring the blending ratio of the rejected stock within any of the green footprints provided in **Appendix I** either by adding FRK in FR or by adding conventional rice in FR so that the blending ratio in the FR becomes acceptable.
- 4.4 The procuring agency should verify the CoAs of FRK, premix by scanning the QR code of CoA and check the blending ratio of FRK with conventional rice from the matrix of Blending ratio (**placed below at Appendix I**)
- 4.5 At the time of acceptance of FR, the Blending Ratio would be checked on a sample size of 50 Grams.
- 4.6 DFPD may conduct surprise checks to ensure the prescribed level of micronutrients in Fortified Rice at any stage mentioned above to address any complaints/grievances/references.



# Appendix -I

## Matrix for Blending Ratio

Micronutrients	Limits	Units	Scenario 1	Scenario 2	Scenario 3
Fe	2800-4250	mg/kg	2800	3525	4250
Folic Acid	7500-12500	µg /kg	7500	10000	12500
Vitamin B12	75-125	µg /kg	75	100	125

Blending Ratio	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6
<b>Scenario 1</b>								
Fe	2520	2800	3080	3360	3640	3920	4200	4480
Folic Acid	6750	7500	8250	9000	9750	10500	11250	12000
Vitamin B12	67.5	75	82.5	90	97.5	105	112.5	120
<b>Scenario 2</b>								
Fe	3172.5	3525	3877.5	4230	4582.5	4935	5287.5	5640
Folic Acid	9000	10000	11000	12000	13000	14000	15000	16000
Vitamin B12	90	100	110	120	130	140	150	160
<b>Scenario 3</b>								
Fe	3825	4250	4675	5100	5525	5950	6375	6800
Folic Acid	11250	12500	13750	15000	16250	17500	18750	20000
Vitamin B12	112.5	125	137.5	150	162.5	175	187.5	200

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## CHAPTER- 11

### OUT TURN RATIO (OTR)

1. Out Turn Ratio (OTR), also known as milling yield is an essential parameter that indicates the percentage of rice obtained from a given quantity of paddy. It is a measure of the efficiency of the rice milling process and can be affected by factors such as milling equipment, settings, rice variety, inherent quality of the paddy and pre-treatments like steaming or parboiling.

2. The Department of Food and Public Distribution has prescribed the Out Turn Ratio (OTR) for Raw Rice and Parboiled Rice as under:

Sl. No.	Category of Rice	OTR (%)
1.	Raw Rice	67
2.	Parboiled Rice	68

3. The above mentioned OTR is based on the recommendations of the expert committee constituted for technical examination of the reports of the study on "*Trial milling of paddy to obtain Out Turn Ratio*" conducted by Central Food Technological Research Institute (CFTRI), Mysore; Paddy Processing Research Centre (PPRC), Thanjavur (renamed as IICPT, HFPT and NIFTEM-T) and Indian Institute of Technology, Kharagpur during 1993-94.

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## CHAPTER -12

### PROCEDURE FOR APPEALS

#### A. REJECTION OF RICE STOCKS NOT CONFORMING TO FAQ NORMS

1. The concerned Technical Assistant/ Manager (QC), FCI will check the delivered lot of rice within 24 hours of dumping.

#### 2. FIRST APPEAL

- i) If the lot is rejected by the Manager (QC), FCI the rice miller/ State Agency have an option to appeal against rejection within 24 hours of receipt of the rejection letter.
- ii) On receipt of the appeal lodged by the supplier in writing, Four (04) jointly sealed samples will be drawn by Manager (QC), FCI in association with the representatives of the agency concerned/rice miller immediately.
- iii) Three samples will be sent to the concerned district lab of FCI immediately along with the appeal letter.
- iv) The 4th sealed sample will be given to the State Government or its representative and it should remain in the custody of an officer not below the rank of Assistant Director.
- v) In case, the State Government requests for review of the analysis results of the third appeal at CGAL, the 4th sample will act as a review sample for analysis by CGAL.
- vi) For the first appeal at the district lab of FCI, the AGM (QC), FCI will analyze one of the sealed samples jointly with the representative of the State Government/rice miller within three working days and shall inform them the outcome of analysis.
- vii) The representative of the State Government/rice miller will submit a letter to the AGM (QC), FCI indicating either acceptance of analysis results or their intention to prefer an appeal in case of non acceptance of the result on the same day.

#### 3. SECOND APPEAL

- i) In case of non-acceptance of result of first appeal, 2nd sealed sample should be sent to the concerned Regional Office, FCI on the next working day along with the letter of appeal given by the representative of the State Government/Rice miller.
- ii) At the regional level, DGM (QC), Regional Office, FCI will decide on the appeal by analyzing the second sealed sample in association with representative of the State agency/Rice miller within 3 working days.



iii) The outcome of the analysis shall be informed to the agency concerned/Rice miller through e-mail and in writing by DGM (QC) on the day of the analysis itself.

iv) In case of non-settlement of objection/dispute, the Rice miller/State Government shall have two working days time to respond and communicate to Central Grain Analysis Laboratory about their intention to avail the option of third appeal under intimation to DGM (QC), Regional Office, FCI.

#### **4. THIRD APPEAL**

- i. The third sealed sample shall be sent to CGAL under intimation to DGM (QC), Regional office, FCI.
- ii. On receipt of the sample, the CGAL will communicate the results to the State Government and FCI within 5 working days.

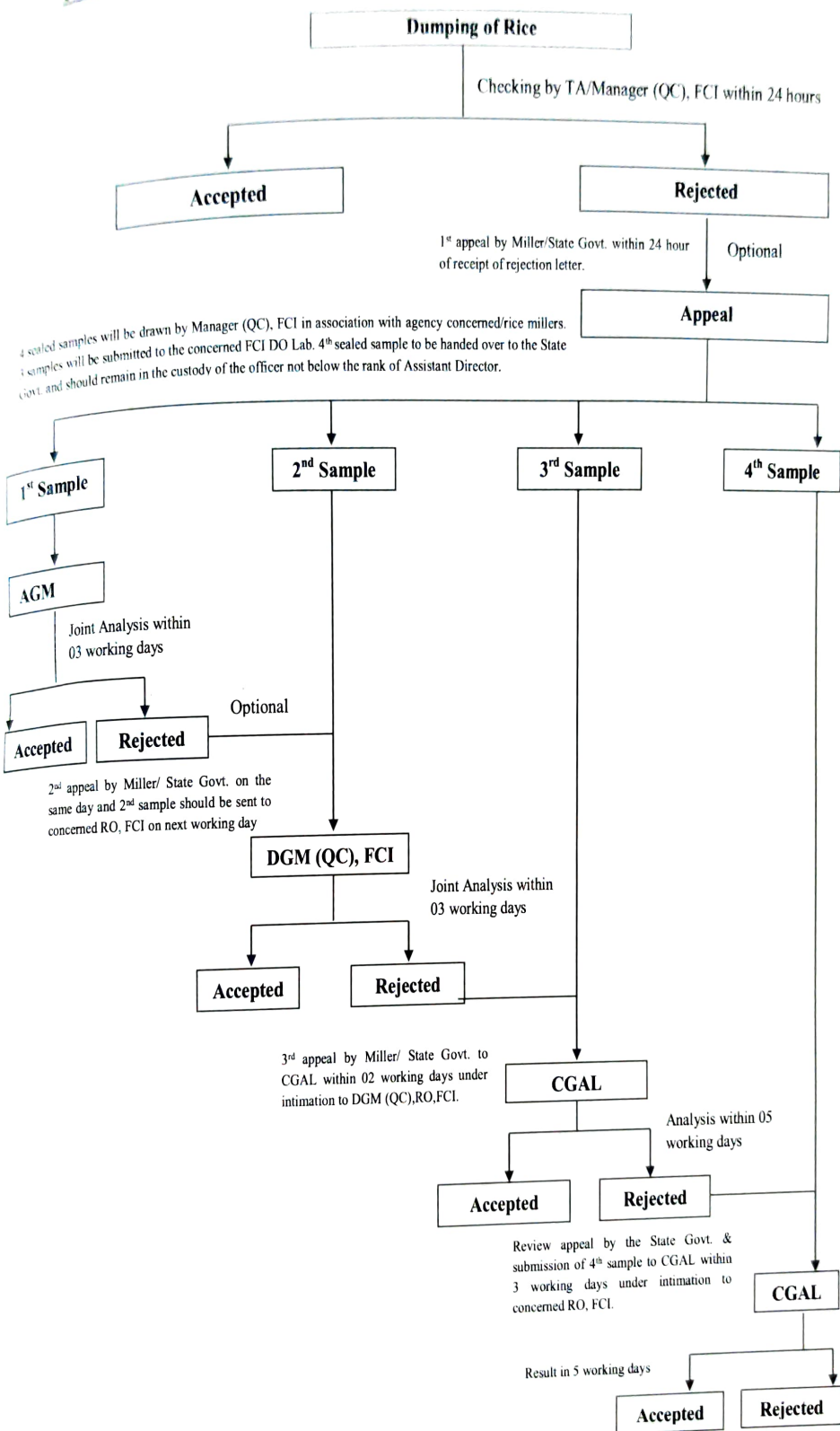
#### **5. FOURTH APPEAL**

- i. In case, the State Government wants to request for review of the analysis results of CGAL, they should communicate and provide a review sample (4<sup>th</sup> sealed sample) to CGAL for analysis within 3 working days under intimation to the concerned FCI Regional/District office.
  - ii. CGAL will communicate the results of the review sample to the State Government and FCI within 05 working days.
6. In case the Manager (QC), FCI from the district office has been deputed in the depots for acceptance of rice, the concerned Manager (QC), FCI will be considered as the depot staff for acceptance/rejection of rice. Therefore, she/he will not be associated in analysis of samples at the district office in case of an appeal.
7. The result of appeal at all level shall be communicated to the State Government/Rice mills by FCI in writing and email also.
8. During the pendency of the appeal against the rejection of a particular rice lot, the Rice miller will be allowed to deliver the rice till the final outcome of the appeal.
9. If the appeal is upheld at any level, FCI will accept the stock and separate departmental action will be initiated against the delinquent officers.
10. In case the appeal is rejected at all three levels, the storage charges will be levied by FCI from the date of delivery of a rice lot as per their procedure. Further, the miller will have to lift the rejected stock within 24 hours, if the miller fails to do so, the further delivery of stocks will be stopped.
11. To avoid frivolous appeals a caution notice may be issued to the concerned Rice miller in the event of rejection of appeal at all levels and for repeated occurrence of such appeal, other punitive action can be considered against the concerned Rice miller.



*#Note: In case no representative of the State Government/Rice miller is present for joint analysis, the outcome of the analysis shall be informed to the agency concerned/Rice miller through e-mail and in writing by AGM (QC), FCI on the day of analysis itself. The concerned State agency/ Rice miller shall have two working days time to respond and communicate to the regional office whether they intend to avail the option of the next level appeal under intimation to AGM (QC).*

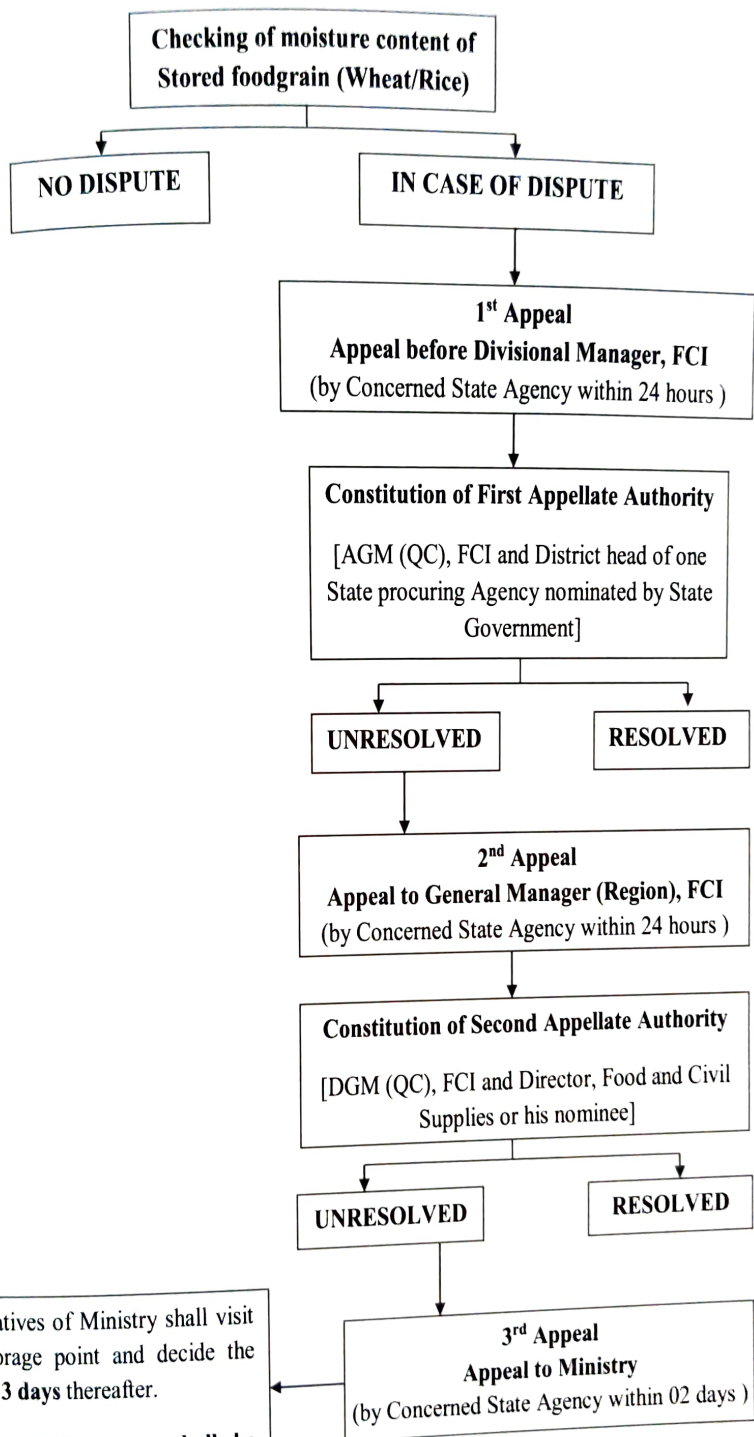
# Flow Chart for Appeal Against Rejection of Rice Stocks not Conforming to FAQ Norms



**B. IN CASE OF DISPUTE DURING CROSS CHECKING OF MOISTURE  
CONTENT OF STORED FOODGRAIN (WHEAT/RICE) IN COVERED  
GODOWNS**

1. The concerned State Agency shall appeal before Divisional Manager (DM), FCI within 24 hours and the DM FCI shall constitute a joint committee of AGM (QC) FCI and District Head of one SPA (State Procuring Agency) duly nominated by the State Govt. on the same day of receipt of Appeal (**designated as First Appellate Authority**).
2. The joint Committee shall visit the storage point within 48 hours to resolve the issue.
3. In case, the State Agency is not satisfied with the outcome of First Appellate Authority, then a second Appeal can be made to GM (Region) concerned within 24 hours. Accordingly, GM (Region) shall constitute a joint committee of Director, Food and Civil Supplies or his nominee and DGM (QC) on the same day of the receipt of Appeal (**designated as Second Appellate Authority**).
4. The joint committee (Second Appellate Authority) shall visit the storage points within 48 hours to resolve the issue.
5. However, in case of non-settlement of dispute, the state agency shall raise the matter at final level i.e. with Ministry within two days.
6. The representative of the Ministry shall visit the concerned storage point to resolve the issue and thereafter shall decide the matter within 3 days of visit to the storage point.
7. The outcomes of this stage shall be treated as final. The results of third Appellate Authority (Ministry) shall be binding upon the both parties.

Flow Chart for Appeal in case of dispute during cross checking of Moisture Content of Stored Foodgrain (Wheat/Rice) in Covered Godowns



The representatives of Ministry shall visit concerned Storage point and decide the matter **within 3 days** thereafter.

The outcome of this stage shall be treated as final and binding upon both parties.



**Guidelines for disposal of damaged foodgrains held by State Govt. and its agencies as per the Policy letter No. 8-10/2004-PY-IV dated 08.07.2014 is reproduced as below:**

1. Whenever any stock of foodgrains of Central Pool lying in the custody of a State Agency is found to be non-issuable, by the concerned agency it will report the matter to the State Government and the GM, FCI concerned. On receiving such a report about upgradeable/damaged foodgrains, the State Government, shall immediately constitute a Joint Technical Committee at District level consisting of two representatives of FCI also for conducting categorization of such non-issuable stocks. The Area Manager, FCI concerned will nominate these two representatives, one Quality Control Personnel and an Accounts Officer in the District Level Technical Committee whenever a request is received for this purpose. Joint Technical Committee will get the quality of such stocks checked and if the stocks are found to be non-issuable will decide whether they are upgradeable or damaged. In case, the stocks are found to be upgradeable then State Agency concerned will be given three month's time to upgrade the same. The GM of the region concerned may extend the time required for upgradation of stocks by one month on the basis of genuine justification given by State Agencies. If the State Agency does not upgrade such stocks within three months, the FCI will declare them as damaged. If the Joint Technical committee finds that stocks are damaged and cannot be upgraded, the information about stocks found as damaged or declared as damaged by FCI will immediately be reported to The State Government concerned and FCI HQs.
2. On declaring any Central Pool stocks lying with a State Agency as non-issuable (damaged), the FCI on its part should report the matter to the FC Accounts Division of the Department of Food & Public Distribution, Government of India and the Department and FCI, as may be the case, shall not pay any carrying cost or other charges etc. to the State Agency for such foodgrains from the date of such declaration by FCI/State Government.
3. In case the Joint Technical Committee finds the stocks to be damaged, the appropriate number of samples of all such damaged stocks shall be jointly drawn and got analyzed by the above mentioned District Level Technical Committee in a District Laboratory of FCI or at any other suitable mutually agreed laboratory. The Technical Committee shall submit the analytical results on various concerned parameters of these samples and their recommendation on categorization of the

stocks concerned to the State Government/State Government Agency with a copy to the GM (Region), FCI concerned.

4. On receipt of analytical report of the Joint Technical Committee on categorization, the State Government/ State Agencies concerned may examine and accept it and proceed ahead for disposal of the damaged stock accordingly or, if required, they may constitute a State level verification Committee of technical experts to randomly check 20% of categorization done by the District level Committee.
5. State Govt. and its Agencies shall dispose of damaged foodgrains at or above the reserve price fixed as per these guidelines through tender/auction to the bonafide manufacturer/consumer of feed, including the State Government and its Agencies having similar facilities, on the best commercial terms by following transparent procedure and in accordance with the procedure followed by the FCI for such disposal. A representative of FCI to be nominated by GM, (Region) concerned in the committee to be constituted for the evaluation of tender by the MD/Head of the concerned State Agency, so as to ensure a greater transparency, better discovery of market rates and sale of damaged foodgrains to the bonafide purchaser only. The eligible participants of tender will also be allowed to take samples of the lots of damaged foodgrains under auction to pre-check their suitability for animal consumption etc.
6. The entire exercise of disposal of damaged foodgrains should be time-bound and it shall be completed within a maximum period of six months from the date of declaration of stocks as 'damaged' by FCI as stated in Para 1 of these guidelines. The GM of the region concerned may extend the period by 2 months if proper justification is furnished by the concerned State Agency.
7. Whenever any stock is detected as damaged, the State Government/State Agency concerned should invariably enquire into it parallelly to find out the reasons for the stocks getting damaged/becoming non-issuable. Factors like the age of the stocks vis-a-vis their prescribed shelf-life, the reasons for storage beyond prescribed shelf-life, the type of storage (covered/CAP/Unscientific CAP) etc. should be looked into and in all such cases responsibility for any lapses, malpractices, negligence etc. should be fixed and action should be taken for recovery of losses against the depot manager & other responsible officers/officials, as per findings of enquiry.
8. At every instance of accrual 1000 MT or more of damaged foodgrains of Central Pool in the State pertaining to any individual State Agency or as part of combined stock

of various State Agencies, the State Government shall immediately depute a Vigilance Squad to check the reasons for such accrual, suggest necessary action to punish the guilty, if any, and to suggest measures to prevent any occurrence of such damage to the stocks in future.

- o As provided in the guidelines laid down for disposal of such stocks by FCI, the State Government/State agencies should try to have rate running contract to dispose of less than 500MT of damaged stocks. This rate running contract should be finalized by them in line with the procedure being followed by FCI.
10. Reserve price for tender sale of all damaged foodgrains may be fixed as under:

a	Feed-I	60%.of MSP of the crop year for wheat 60% of derived MSP of the crop year for rice
b	Feed-II	50% of MSP of the crop year for wheat 50% of derived MSP of the crop year for rice
c	Feed-III	40% of MSP of the crop year for wheat 40% of derived MSP of the crop year for rice
d	Industrial use	30% of MSP of the crop year for wheat 30% of derived MSP of the crop year for rice
e	Manure	10% of MSP of the crop year for wheat 10% of derived MSP of the crop year for rice

Details of Feed etc. are as below:

#### Damaged Wheat/ Rice Categorization

Sl.No.	Particulars of Wheat and Rice	Percentage of sound grains other than Foreign and damaged foodgrains
1	Feed-I	(i) Sound grains 85% to less than 95% in case of rice and 94% in case of wheat. (ii) Weevilled grains alone exceeding 10% by count. (iii) Uric acid content alone found exceeding 100mg/kg.



2	Feed-II	Sound grains 70% to less than 85%
3	Feed-III	Sound grains 55% to less than 70%
4	Industrial use	(i) Sound grains 30% to less than 55% (ii) Contaminated with poisonous chemicals and fertilizers
5	Manure use	Sound grains 10% to less than 30%

11. Participation of FCI in the categorization and disposal of damaged foodgrains held by the State Government and its agencies for Central pool shall in no way mean that FCI/GOI has agreed to compensate any losses or claims either of the State Government or any of its agencies. Since the stocks are damaged while in the custody of the State Agencies they should be responsible for bearing the losses and the Government of India will not be reimbursing the losses in such cases, as the safe custody/preservation of procured foodgrains is the responsibility of State Agencies.
12. FCI should periodically monitor the progress of disposal of damaged foodgrains stocks lying with the State Agencies and should send a State wise monthly report on disposal of such stocks and pendency thereon alongwith the period of such pendency to the Department of Food & Public Distribution, Government of India.
13. These guidelines shall be applicable only for the disposal of non-issuable (damaged) stocks of foodgrains procured by State Governments/State Agencies on behalf of Government of India towards central pool and lying in their custody on behalf of Government of India including the foodgrains procured under DCP mode.

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**List of SoPs/Instructions Superseded by Letter No. 36-2/2024-QCC (E: 386657) dated April, 2024**

Sr. no.	OM No.	Date	Subject
1.	39-5/2013-S&I	28.10.2015	Appeal for Challenging the result of rice lots rejected by FCI during acceptance of rice in Punjab
2.	40-13/2017-QCC/129-165	09.11.2017	Mechanism of Quality Control of Foodgrains during Procurement, Storage and Distribution
3.	40-4/2020-QCC	16.07.2021	Standard Operating Procedure (S.O.P.) for monitoring quality of foodgrains stocks procured under Decentralized Procurement (DCP) scheme
4.	36-5/2018-QCC (Part)	13.12.2022	Operational Guidelines on Quality Control for Fortified Rice Kernels (FRK) and Fortified Rice (FR)
5.	36-5/2018-QCC (Part)(E: 377504)	26.12.2023	Standard Operating Procedure (SoP) for Quality Management Protocols for Fortified Rice Kernels (FRK) and Fortified Rice (FR)

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## **BIBLIOGRAPHY:**

1. Official documents from the archives of the Department of Food & Public Distribution (DFPD)
2. Manuals & Specifications from the archives of the Food Corporation of India (FCI)
3. Standards& Regulations from the archives of Food Safety & Standards Authority of India (FSSAI)
4. Standards and SOPs from the archives of Bureau of Indian standards (BIS)

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### ADDITIONAL RESOURCES:

S.No.	Name of Organization	Reference of Chapter/ Page no.	Link
1.	Department of Food and Public Distribution	Chapter-1	<a href="https://dfpd.gov.in">https://dfpd.gov.in</a>
2.	Bureau of Indian Standard	Chapter-4, Page No. 23	<a href="https://cdn.standards.iteh.ai/samples/36816/7c5ff5ae9e9e4b4bb3750691281eb0a8/ISO-6644-2002.pdf">https://cdn.standards.iteh.ai/samples/36816/7c5ff5ae9e9e4b4bb3750691281eb0a8/ISO-6644-2002.pdf</a>
3.	Bureau of Indian Standard	Chapter-5, Page No. 28	<a href="https://anaajkharid.in/Images/FRK.IS%2017780%20OF%202021%20(Specifications%20FR).pdf">https://anaajkharid.in/Images/FRK.IS%2017780%20OF%202021%20(Specifications%20FR).pdf</a>
4.	Bureau of Indian Standard	Chapter-06, Page No.33	<a href="https://www.hrmsci.in/aps/CivilEngg/IS%2016144_2014_Reff2020.pdf">https://www.hrmsci.in/aps/CivilEngg/IS%2016144_2014_Reff2020.pdf</a>
5.	Food Safety and Standards Authority of India	Chapter-10 Page No.45	<a href="https://www.fssai.gov.in/upload/advisories/2023/11/65575be226620Direction_Operationalization%20of%20Draft%20FPS&amp;A_Standards%20of%20Vit-Mineral%20Premix%20for%20FRK_17.11.2023.pdf">https://www.fssai.gov.in/upload/advisories/2023/11/65575be226620Direction_Operationalization%20of%20Draft%20FPS&amp;A_Standards%20of%20Vit-Mineral%20Premix%20for%20FRK_17.11.2023.pdf</a>
6.	Food Safety and Standards Authority of India	Chapter-10, Page No.46	<a href="https://fssai.gov.in/cms/food-safety-and-standards-act-2006.php#:~:text=It%20is%20an%20Act%20to,and%20wholesome%20food%20for%20humanB">https://fssai.gov.in/cms/food-safety-and-standards-act-2006.php#:~:text=It%20is%20an%20Act%20to,and%20wholesome%20food%20for%20humanB</a>
7.	Bureau of Indian Standard	Chapter-10 Page No.46	<a href="https://archive.org/details/gov.in.is.17854.2022/page/n3/mode/2up">https://archive.org/details/gov.in.is.17854.2022/page/n3/mode/2up</a>
8.	Gazette notification of Food Safety and Standards Authority of India	Chapter-10 Page No.46	<a href="https://www.fssai.gov.in/upload/uploads/files/Compendium_Labelling_Display_23_09_2021.pdf">https://www.fssai.gov.in/upload/uploads/files/Compendium_Labelling_Display_23_09_2021.pdf</a>
9.	Gazette notification of Food Safety and Standards Authority of India	Chapter-10 Page No.46	<a href="https://egazette.gov.in/(S(mhvgmj4gegabincabqrogxri))/ViewPDF.aspx">https://egazette.gov.in/(S(mhvgmj4gegabincabqrogxri))/ViewPDF.aspx</a>
10.	Bureau of Indian Standard	Chapter-10, Page No.47	<a href="https://anaajkharid.in/Images/FRK.IS%2017780%20OF%202021%20(Specifications%20FR).pdf">https://anaajkharid.in/Images/FRK.IS%2017780%20OF%202021%20(Specifications%20FR).pdf</a>