

**F. No. I-13033/1/2016-Institution Division(Part)**  
**Ministry of Food Processing Industries**  
**Government of India**  
**Panchsheel Bhawan, August Kranti Marg,**  
**New Delhi-110049**

Dated: 20.11.2017

Subject:- Operational Guidelines for Scheme for Human Resources and Institution – Skill Development (SHRISD)

**1. Introduction:**

**1.1** The Ministry has formulated a Scheme for Human Resources and Institution – Skill Development (SHRISD) under the Central Sector Scheme Pradhan Mantri Kisan Sampada Yojana for a period coterminous with the 14th Finance Commission cycle.

**1.2** India is in transition to a knowledge based economy and its competitive edge will be determined by the abilities of its people to create, share and use knowledge more effectively. This transition will require India to develop workers into knowledge workers who should be flexible, analytical, adaptable and multi skilled. Food processing sector, with huge potential for employment generation, is one of the largest sectors in respect of requirement of human resources.

**2. OBJECTIVES OF THE SCHEME:**

**2.1** To augment number of skilled workforce in different domains of food processing industries like floor level workers, Operators, Packaging and assembly line workers, quality control supervisors etc. and to meet the skilled Human Resources requirement in food processing sector.

**2.2** To develop training/ Course modules in English, Hindi and recognized regional languages based on the Qualification Packages (QPs) validated by the NSDC as National Occupational Standards for different job roles in various sectors of Food Processing Industries.

**2.3** To assist Training Centers (TCs) for having requisite infrastructure for providing skill training for different job roles.

**3. SCOPE OF THE SCHEME**

**3.1.** The scheme aims to upgrade the skills of the workers for various job roles in food processing sector depending upon their educational qualification, available/ future technological trends and the job role potential in various sectors of food processing, which can make them eligible for a suitable employment or self-employment.

**3.2.** To help create enabling resources of Training Partners (TPs) and course content developers to implement various skill development programmes of food processing sectors in the country dovetailing with initiatives under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY).

**3.3.** The scheme will have following components:

- a.** Development of Course Curriculum/ Training Module in English, Hindi and translation of the same in recognized regional languages (as per 8<sup>th</sup> schedule) based on the Food Processing QPs validated by NSDC as National Occupational Standards.
- b.** Establishing Training Center (TC) / Expansion of Existing Training Centre to impart skill training on various job roles in food processing as per National Skill Qualification Framework (NSQF).

**3.4.** The components of the scheme will be implemented as per the National Skill Qualification Framework (NSQF) and operational procedures established by the Sector Skill Council i.e. Food Industry Capacity & Skill Initiative (FICSI). The development of course curriculum/ training modules/ translation of training modules in regional languages is required to be as per validation of NSDC.

#### **4. COMPONENTS OF THE SCHEME :**

##### **4.1. Development of Course Curriculum/ Training Module in English, Hindi and translation of the same in recognized regional languages based on the QPs validated by NSDC as National Occupational Standards.**

**4.1.1.** In order to impart standardized skill training, devising modular training curriculum for each job role in accordance to the QPs validated by NSDC is of paramount importance. High quality course content in English, Hindi and Regional languages in print as well as in multi-media for each job role identified under sub-sector, developed and translated under the scheme, shall be available to the training centers for conducting skill training on respective job roles of Food Processing Sector.

##### **4.1.2. Eligibility –**

All recognized Central / State/ Deemed Universities or its Departments of Food processing Technology, who propose to develop training modules or who have already started developing/ translating the training modules as per the validated QPs, but have not yet completed it, will be eligible to avail assistance under the scheme.

#### **4.1.3. Pattern of Assistance (As Grants-in-aid) –**

- a)** Grants-In-Aid would be provided to the eligible Institutions upto a maximum of Rs. 5.00 lakh per QP for development of training module both in print and Multi media for each job role.
- b)** Upto a maximum of Rs. 0.50 lakh per QP would be provided for the translation of already developed training modules in recognized regional languages as per 8<sup>th</sup> schedule both in print and Multi media for each job role.
- c)** The grant will be disbursed on re-imbursement basis after the training modules are developed / translated and further validated by the National Skill Development Council(NSDC)/ Food Industry capacity & Skill Initiative(FICSI).
- d)** Copyright of the training module, so developed, shall lie with the respective developer. However, MoFPI shall have unrestricted right of usage without any obligation to pay royalty and may authorize any training center to use the material.

#### **4.1.4. How to apply –**

- a)** The applicant institute need to apply in prescribed format (**Annexure-I**) submitting therewith Food Processing sector training modules/ translated training modules duly validated by NSQF. Development of course content in sector, other than Food Processing, shall not be eligible for assistance under the scheme.
- b)** The application is required to be forwarded by Head of the Department/ Institution.
- c)** The application is to be accompanied with a confirmation letter from NSDC/FICSI that the training module/ translation of the training module has not previously been done by any other agency/ institute. The date on which proposed training module is validated by NSDC/FICSI should be later to the date on which applications for grants under the scheme is called for by the Ministry.
- d)** Applicant has to provide Surety Bond in **Annexure-III** and an affidavit that he has not availed assistance from any Government Agency for development of same training module **Annexure-IV**

### **4.2. Establishing Training Center (TC) / Expansion of Existing Training Centre to impart skill/ training on various job roles in food processing.**

#### **4.2.1 Objective –**

To impart training for specific job roles in food processing sector, TCs are required to be equipped with specific machineries as prescribed under training modules. Further, for affiliation/accreditation of the Training Centres with FICSI/NSDA/State Skill Councils, TCs need to fulfil the prescribed requirement of infrastructure. In order to help establishing new TCs or to expand the infrastructure of existing TCs, grants in aid will be provided for purchase of plant & machinery, as per the requirement of specific Food Processing training module.

#### **4.2.2 Eligibility –**

Following Institutions/organizations shall be eligible to apply under the scheme-

- a)** Recognized Central/state/Deemed Universities or its Department of Food Processing Technology.
- b)** Colleges/Institutions of Food Technology, affiliated with central/ state Govt. Universities.
- c)** Govt. approved Industrial Training Institutes (ITIs),
- d)** NABL accredited Food Labs,
- e)** Training Centers affiliated to or accredited with FICSI, NSDA or State Skill Councils.

#### **4.2.3 Pattern of Assistance (As Grant-in-aid) –**

- a)** Grants-In-Aid will be provided at the rate of 50% of cost of plant & machineries required for aNSQF validated training module subject to maximum of Rs. 15 lakh per training module and limited to maximum two training modules per TC.
- b)** The Grants-In-Aid will be reimbursement basis i.e. after the plant machinery has been purchased and installed by the Institute/ organization.
- c)** The list of eligible plant and machinery under the scheme for different eligible training modules, eligible under the scheme is at **Annexure-VI**.

#### **4.2.4 How to apply –**

- a)** The applicant institute/ TC need to apply in prescribed format (**Annexure-II**) with details of Plant & machinery purchased as per the training modules validated by NSQF and should be accompanied with voucher/bill of the purchase.
- b)** The application is required to be forwarded by Head of the Department/ Institution.
- c)** The application should be accompanied with certificate from FICSI, NSDA or State Skill Council that the training centre has been affiliated to/accredited with respective bodies.
- d)** The applicant has to certify that plant & machinery purchased by the TC is as per the requirement of the training module of \_\_\_\_\_(name of the sector and Job role).
- e)** The applicant has to submit a certificate from NSDA/FICSI/State Skill Council/District Magistrate of the area, in which training center is located, to the effect that the applicant training center is operational. Such a certificate should not be more than one month older than the date of application submission.

- f)** Certificate from charted Engineer duly certified by Head of Deptt./Institution on installation of plant and machinery as per **Annexure-V** needs to be submitted.
- g)** Applicant has to provide Surety Bond in **(Annexure-III)** and an affidavit that he has not availed assistance from any Government Agency for the same purpose **(Annexure-IV)**

#### **4.3 Submission of the Proposal:**

The proposal is required to be sent by post to “Director (skill development), Ministry of Food Processing Industries, Panchsheel Bhawan, August Kranti Marg, New Delhi”. The envelope containing the proposal needs to be clearly marked “Proposal for MoFPI sponsored skill development Project”.

#### **4.4 Release of Grants:**

After scrutiny of the proposals by a Committee, constituted for this purpose, and approval of the proposal by competent authority, approved grant-in-aid will be released in one instalment for **(i)** Development of Training module, and **(ii)** Establishment/ expansion of training centre. The grant-in-aid shall be on reimbursement basis in both the cases and shall be made online through PFMS.

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**ANNEXURE-I****Application for Development of Course Curriculum/ Training Module in English, Hindi and translation of the same in recognized regional languages based on the QPs validated by NSDC as National Occupational Standards.**

1.	NAME OF THE INSTITUTION	
2.	Nature of Organization (Company, Trust, College, University, Society, etc.)	
3.	Registered under which Act?	
4.	Year of Incorporation/ Registration	
5.	Registered Address	
6.	Working for how many years in Skilling ecosystem?	
7.	PAN No of Organization	
8.	TAN No. of organization	
9.	No of employees in the organization	
10.	Particular of Training module developed by Institution and details of validated QP	
10a	Whether developed in Print as well as Multi-media? (Pl provide details and enclose copy of the same)	
10b	Whether translated to recognised regional language? (Pl provide details and enclose copy of the same)	
11.	Whether training module validated by NSDA? (Pl provide validation letter)	
12.	Bank Account details	

Certified that the above information is correct and true to the best of my knowledge.

Signature\_\_\_\_\_

Name\_\_\_\_\_

Designation\_\_\_\_\_

Institution\_\_\_\_\_

Email\_\_\_\_\_

Mobile\_\_\_\_\_

**Application and Establishing Training Center (TC) / Expansion of Existing Training Centre to impart skill training on various job roles in food processing and for Development of Course Curriculum/ Training Module under Human Resources and Institution – Skill Development (SHRISD)**

**PART A- GENERAL INFORMATION**

1.	NAME OF THE ORGANIZATION	
2.	Nature of Organization (Company, Trust, College, University, Society, etc.)	
3.	Registered under which Act?	
4.	Year of Incorporation/ Registration	
5.	Registered Address	
6.	Working for how many years in Skilling ecosystem?	
7.	PAN No of Organization	
8.	TAN No. of organization	
9.	No of employees in the organization	
10.	No of Training Centers	
11.	Whether affiliated with NSDA/ FICSI/State Skill Councils?	
12.	Bank Account details	

**PART B- FINANCIAL INFORMATION**

1.	Audited Annual Turnover for the last three years	
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### **PART C-TRAINING CENTER DETAILS**

1.	Name of the Training Center	
2.	Whether Owned, Leased, Rented or Franchise?	
3.	Address of the Training Center	
4.	Details of the training to be conducted in the center	
5.	Whether training is being conducted under any scheme of govt. and to carry out training?	
6.	Job roles (Job Role Name, QP Code, NSQF Level) for which approval has been received from the said scheme?	
7.	Whether training under any other sector carried out in the training center?	
8.	No. of Classrooms	
9.	Area of each classroom	
10.	Details of the training equipment available	
11.	Job Role wise details of the Equipments for which reimbursement is to be claimed.	
12.	Price of each equipment for which reimbursement is to be claimed.	
13.	Total amount for which reimbursement is to be claimed.	

Certified that the above information is correct and true to the best of my knowledge.

Signature\_\_\_\_\_

Name\_\_\_\_\_

Designation\_\_\_\_\_

Institution\_\_\_\_\_

Email\_\_\_\_\_

Mobile\_\_\_\_\_

**PART D- DOCUMENT CHECKLIST**

1.	Certificate of Incorporation	
2.	Rent Agreement/ Franchise Agreement/ Ownership document of the training center, as applicable	
3.	PAN Card	
4.	Tan No.	
5.	Electricity Bill/Telephone Bill/ Municipal House tax/ or any other document for the last three months of the Training Center.	
6.	NSDA/ FICSI/ Sector Skill Council accreditation or Affiliation Certificate.	
7.	Approval letter from the scheme authorities under which training to be carried in the Training Center.	
8.	Audited Financial Statements for the last three Financial Years.	
9.	Photos of:	
	a. Training Center Building	Enclose separately
	b. Approach Road	-do-
	c. Each Classroom	-do-
	d. Photo of each equipment with caption containing the name of the equipment.	-do-
10.	Surety Bond Annexure III & Affidavit Annexure IV,) –in Rs.100 Non judicial stamp paper duly notarised.	
11.	Voucher/Bill for each equipment for which grant is being applied.	
12.	Certificate from NSDA/FICSI/State Skill Council/District Magistrate of the area on location & status of TC.	
13.	Certificate from charted Engineer (Annexure-V)	

**(To be prepared on Non-Judicial Stamp paper of Rs. 100/-)**

**SURETY BOND**

KNOW ALL MEN BY THESE PRESENTS that we, M/s \_\_\_\_\_, a \_\_\_\_\_ (Type of organization) incorporated / registered under the \_\_\_\_\_ (Name of the Act) And having its registered office at \_\_\_\_\_ (hereinafter called the "Obligors") are held fully and firmly bound to the President of India (hereinafter called the "Government") for the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) well and truly to be paid to the Government on demand and without a demur for which payment we firmly bind ourselves and our successors and assignees by these presents.

SIGNED on the \_\_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand \_\_\_\_\_.

WHEREAS on the Obligors' request, the Government as per Ministry of Food Processing Industries' Sanction Order No. \_\_\_\_\_ Dated \_\_\_\_\_

(hereinafter referred to as the "Letter of Sanction") which forms an integral part of these presents, and a copy whereof is annexed hereto and marked as Annexure-I, agreed to make in favour of the Obligors grants-in-aids- in-aid of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) for the purpose of \_\_\_\_\_ (description of the project) at \_\_\_\_\_ out of which the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) have been paid to the Obligors (the receipt of which the Obligors do hereby admit and acknowledge) on condition of the Obligors executing a bond in the terms and manner contained hereinafter which the Obligors have agreed to do.

NOW the conditions of the above written obligation is such that if the Obligors duly fulfill and comply with all the conditions mentioned in the letter of sanction, the above written Bond or obligation shall be void and of no effect. But otherwise, it shall remain in full force and virtue. The Obligors will abide by the terms & conditions of the grants-in-aid by the target dates, if any specified therein.

THAT the Obligors shall not divert the grants-in-aids and entrust execution of the Scheme or work concerned to another institution(s) or organization(s).

THAT the Obligors shall abide by any other conditions specified in this agreement and in the event of their failing to comply with the conditions or committing breach of the bond, the Obligors individually and jointly will be liable to refund to the President of India, the entire amount of the grants -in-aid with interest of 10% per annum thereon. If a part of the grants-in-aid is left unspent after the expiry of the period within which it is required to be spent, interest @10% per annum shall be charged upto the date of its refund to the Government, unless it is agreed to be carried over.

The Obligors agree and undertake to surrender / pay the Government the monetary value of all such pecuniary or other benefits which it may receive or derive / have received or derived through / upon unauthorized use of (such as letting out the premises on adequate or less than adequate consideration or use of the premises for any purpose other than that for which the grants-in-aid was intended of the property) buildings created / acquired constructed largely from out of the grants-in-aid sanctioned by the Government of India, Ministry of Food Processing Industries or the administrative Head of the Department concerned. As regards the monetary value aforementioned to be surrendered / paid to the Government, the decision of the Government will be final and binding on the Obligors.

AND THESE PRESENTS ALSO WITNESS THAT the decision of the Secretary to the Government of India in the Ministry of Food Processing Industries on the question whether there has been breach or violation of any of the terms or conditions mentioned in the sanction letter shall be final and binding upon the Obligors and

IN WITNESS WHEREOF these presents have been executed as under on behalf of the Obligors the day herein above written in pursuance of the Resolution No. \_\_\_\_\_  
Dated

\_\_\_\_\_ passed by the governing body of the Obligors, a copy whereof is annexed hereto as Annexure-II and by \_\_\_\_\_ for and on behalf of the president on the date appearing below:-

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Signature of the AUTHORISED SIGNATORY Signed for and on behalf of (Name of the Obliger in block letters) (Seal / Stamp of Organization)

1. Signature of witness

Name & Address

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2. Signature of witness

Name & Address

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TO BE FILLED UP BY THE MINISTRY

(ACCEPTED)

For and on behalf of the President of India

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Dated: \_\_\_\_\_

Notary Seal & Signature

**Affidavit**

**[As per GFR-230(1)]**

I ..... S/o ..... Resident of .....  
director /

proprietor of M/s ..... do here by solemnly affirms and state as follows:

(a) That organization's sister concern (s)/ inter connected company/Group company as well as the applicant company itself has not obtained any financial assistance for similar purpose from MoFPI.

(b) That the organization has not obtained/applied for or will not obtain any grant/subsidy from any Ministry/Department of Central Govt/GOI organization/agencies and State Govt for the same purpose/activity /same components.

Deponent

**Verification:**

Verified that the content of this affidavit are true and correct to the best of the knowledge and belief of the deponent and no part of this affidavit is kept concealed therein, If anything is found false in this Affidavit subsequently deponent and organisation shall be liable jointly and severally for action under the laws, hence verified at (Place) on (Date).

Deponent

**Notary Seal& Signature**

[Refer Para 4.1.4 (e) of Guidelines]

**CE Certificate (Mechanical) Format for Plant & Machinery:**

**(Letter Head of the CE)**

**CE Certificate (With membership/registration No. of CE) in the following format:-**

**Name of Training Centre:**

**Location with address:**

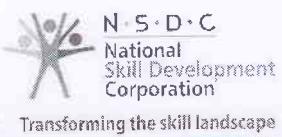
**Date of visit by Chartered Engineer:**

<b>Sl. No</b>	<b>Name of Machinery/ equipment</b>	<b>Quantity</b>	<b>Actual Cost (Lakh Rs)</b>		<b>Supplier / Manufacturer</b>	<b>Installed /Not Installed</b>	<b>Comments on quality, Specifications, etc.</b>
			<b>Basic Cost</b>	<b>Taxes, Freight, Installation , Insurance</b>			
	<b>TOTAL</b>						

**It is certified that all plant and machinery for which grant being sought are new.**

**Signature and Seal of C.E.**

Counter signature of authorized signatory of from TC with Seal



(A)

## Tools & Equipment

For

### Bread & Bakery

## Content

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**Job Role : Baking Technician/Operative (FIC/Q5005)**
**Class Room Size : 300 Sqft**
**Lab Size : 400 Sqft**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Lab Scale Ovens	Electrical, 2 Deck Oven, 4 Tray (3kw each)	2	Yes
2	Baking sheet & Racks	4 rack x 2 sets (electrical of 2 kw each)	2	Yes
3	Commercial Mixers	Min. 2 kg capacity (electrical 300w each)	2	Yes
4	Wire whiskers	Fire resistant with wood handle	2	Yes
5	Refrigerator	100 liters (1kw)	1	Yes
6	Refrigerator	300 liters (1.5kw)	1	No
7	Fryer	electrical fryer – Min. 1 Kg (SS made, 500w)	1	Yes
8	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	Yes
9	Cooling racks	with small blower (50w)	2	Yes
10	Bread slicer manual/mechanical	with a 50w motor	1	Yes
11	Knives	of all types	2	Yes
12	Spatula	of all sizes	2	Yes
13	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
14	Mixing bowl	of different sizes Min. 2lit capacity	2	Yes
15	Work table	4' x 10' SS tables	2	Yes
16	Sinks	with water connection	2	Yes
17	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
18	Thermometer	2 of them should measure about 400 degree Celsius. One of them at below freezing (3)	3	
19	Timer		2	Yes
20	Digital Hygrometer		2	Yes
21	Lab equipment for testing	simple microscope, grinding machine (small size), plate heater	1	No

22	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
23	Packing, wraps rolls	Food grade Aluminum foils	1	Yes
24	Packing, wraps rolls	Food grade HDPE film transparent	1	Yes
25	Aprons	For all students (returnable basis)	30	Yes
26	Cleaning tools		1	Yes
27	Weighing Scale	Min. 5kg	1	Yes
28	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
29	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
30	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	Yes
31	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
32	High speed exhausts	one on each wall of the lab	2	Yes
33	Masks – Head cover, mouth cover	re usable	35	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma in Hotel Management /certificate course in baking	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Craft Baker (FIC/Q5002)**
**Class Room Size : 300 Sqft**
**Lab Size : 400 sqft**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Lab Scale Ovens	Electrical, 2 Deck Oven, 4 Tray (3kw each)	2	Yes
2	Baking sheet & Racks	4 rack x 2 sets (electrical of 2 kw each)	2	Yes
3	Commercial Mixers	Min. 2 kg capacity (electrical 300w each)	2	Yes
4	Wire whiskers	Fire resistant with wood handle	1	Yes
5	Refrigerator	Min. 100 liters (1kw)	1	Yes
6	Refrigerator	300 liters (1.5kw)	1	No
7	Fryer	electrical fryer – Min. 1 kg (SS made, 500w)	1	Yes
8	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	Yes
9	Cooling racks	with small blower (50w)	2	Yes
10	Bread slicer manual/mechanical	with a 50w motor	1	Yes
11	Cake decorative tools		2	Yes
12	Bread Slicer Manual		1	Yes
13	Knives	of all types	2	Yes
14	Spatula	of all sizes	2	Yes
15	Utensils	Min. 1 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
16	Mixing bowl	of different sizes 2lit to 3lit capacity	2	Yes
17	Work table	4' x 10' SS tables	2	Yes
18	Sinks	with water connection	2	Yes
19	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
20	Thermometer	2 of them should measure about 400 degree Celsius. One of them at below freezing	3	Yes
21	Timer		2	Yes
22	Digital Hygrometer		2	Yes

23	Lab equipment for testing	simple microscope, grinding machine (small size), plate heater	1	No
24	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
25	Packing, wraps rolls	Food grade HDPE film transparent	1	Yes
26	Aprons	For all students (returnable basis)	30	Yes
27	Cleaning tools		1	Yes
28	Weighing Scale	Min. 5kg	1	Yes
29	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
30	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
31	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	Yes
32	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
33	High speed exhausts	one on each wall of the lab	2	Yes
34	Masks – Head cover, mouth cover	re usable	35	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology	2
3	Food Engineering or Diploma in Hotel Management /Min. Diploma in Food Technology OR food engineering/ Catering Technology	4
4	Certificate course in baking	5
5	B.SC food science and quality control	4
6	B.sc home science	5

**Job Role: Mixing Technician**
**Class Room Size:300 sqft**
**Lab Size: 300 sqft**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Ovens	Diesel fired, 18 tray (attached to LPG commercial cylinder running for 120 hrs)	2	no
2	Ovens	Electrical, 2 Deck Oven, 4 Tray (3kw each)	2	No
3	Baking sheet & Racks	4 rack x 2 sets (electrical of 2 kw each)	2	No
4	Commercial Mixers	2 – 5kg capacity (electrical 300w each)	2	yes
5	Wire whiskers	Fire resistant with wood handle	2	No
6	Refrigerator	200 liters (1kw)	1	No
7	Refrigerator	300 liters (1.5kw)	1	No
8	Fryer	electrical fryer – 1 to 2 kg (SS made, 500w)	1	No
9	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	No
10	Cooling racks	with small blower (50w)	2	No
11	Bread slicer manual		1	No
12	Bread slicer mechanical	with a 50w motor	1	No
13	Cake decorative tools		2	No
14	Knives	of all types	2	yes
15	Spatula	of all sizes	2	yes
16	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	2	yes
17	Mixing bowl	of different sizes 2lit to 3lit capacity	3	yes
18	Work table	4' x 10' SS tables	2	yes
19	Sinks	with water connection	4	yes
20	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	yes
21	Thermometer	3 of them should measure about 400 degree Celsius. One of them at below freezing (5)	5	yes
22	Timer		2	No
23	Digital Hygrometer		5	yes

24	Lab equipment for testing	simple microscope, grinding machine (small size), plate heater	1	No
25	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
26	<b>Packing, wraps rolls</b>	Food grade Aluminum foils	1	No
27	<b>Packing, wraps rolls</b>	Food grade HDPE film transparent	1	No
28	<b>Aprons</b>	For all students (returnable basis)	35	yes
29	<b>Cleaning tools</b>		1	yes
30	<b>Weighing Scale</b>	5kg, 10kg, 50 kg capacities	3	yes
31	<b>Gas Burner (LPG)</b>	attached to LPG commercial cylinder	1	No
32	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	3	No
33	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	yes
34	Fire extinguishers	near the gas burner, LPG cylinders and ovens	5	yes
35	High speed exhausts	one on each wall of the lab	4	yes
36	Masks – Head cover, mouth cover	re usable	35	yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology	2
3	Food Engineering or Diploma in Hotel Management /Min. Diploma in Food Technology OR food engineering/ Catering Technology	4
4	Certificate course in baking	5
5	B.SC food science and quality control	4
6	B.sc home science	5

**Job Role: Plant Baker**
**Class Room Size: 300 sqft**
**Lab Size: 1000 sqft**

<b>S. No</b>	<b>Equipment Name</b>	<b>Size / Description</b>	<b>Quantity (Nos.)</b>	<b>Mandatory</b>
1	Ovens	Diesel fired, 4tray (attached to LPG commercial cylinder running for 120 hrs)	2	Yes
2	Ovens	Electrical, 2 Deck Oven, 4 Tray (3kw each)	2	No
3	Baking sheet & Racks	4 rack x 2 sets (electrical of 2 kw each)	2	Yes
4	Commercial Mixers	2 – 5kg capacity (electrical 300w each)	2	yes
5	Wire whiskers	Fire resistant with wood handle	2	yes
6	Refrigerator	200 liters (1kw)	1	yes
7	Refrigerator	300 liters (1.5kw)	1	No
8	Fryer	electrical fryer – 1 to 2 kg (SS made, 500w)	1	yes
9	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	yes
10	Cooling racks	with small blower (50w)	2	yes
11	Bread slicer manual		1	yes
12	Bread slicer mechanical	with a 50w motor	1	No
13	Cake decorative tools		2	No
14	Knives	of all types	2	yes
15	Spatula	of all sizes	2	yes
16	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	2	yes
17	Mixing bowl	of different sizes 2lit to 3lit capacity	3	yes
18	Work table	4' x 10' SS tables	2	yes
19	Sinks	with water connection	4	yes
20	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	yes
21	Thermometer	3 of them should measure about 400 degree Celsius. One of them at below freezing (5)	5	yes
22	Timer		2	yes

23	Digital Hygrometer		5	yes
24	Lab equipment for testing	simple microscope, grinding machine (small size), plate heater	1	yes
25	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	yes
26	Packing, wraps rolls	Food grade Aluminum foils	1	yes
27	Packing, wraps rolls	Food grade HDPE film transparent	1	yes
28	Aprons	For all students (returnable basis)	35	yes
29	Cleaning tools		1	yes
30	Weighing Scale	5kg, 10kg, 50 kg capacities	3	No
31	Gas Burner (LPG)	attached to LPG commercial cylinder	1	yes
32	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	3	yes
33	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	yes
34	Fire extinguishers	near the gas burner, LPG cylinders and ovens	5	yes
35	High speed exhausts	one on each wall of the lab	4	yes
36	Masks – Head cover, mouth cover	re usable	35	yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology	2
3	Food Engineering or Diploma in Hotel Management /Min. Diploma in Food Technology OR food engineering/ Catering Technology	4
4	Certificate course in baking	5
5	B.SC food science and quality control	4
6	B.sc home science	5

**Job Role : Plant Biscuit Production Specialist (FIC/Q5003)**
**Class Room Size : 300 Sqft**
**Lab Size : 500 Sqft**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Ovens	Electrical, 2 Deck Oven, 4 Tray (3kw each)	2	Yes
2	Baking sheet & Racks	4 rack x 2 sets (electrical of 2 kw each)	2	Yes
3	Commercial Mixers	Min. 2 kg capacity (electrical 300w each)	2	Yes
4	Wire whiskers	Fire resistant with wood handle	1	Yes
5	Refrigerator	Min. 100 liters (1kw)	1	Yes
6	Refrigerator	300 liters (1.5kw)	1	No
7	Fryer	electrical fryer – Min. 1 kg (SS made, 500w)	1	Yes
8	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	Yes
9	Cooling racks	with small blower (50w)	2	Yes
10	Bread slicer Manual/Mechanical	with a 50w motor	1	Yes
11	Cake decorative tools		2	No
12	Knives	of all types	2	Yes
13	Spatula	of all sizes	2	Yes
14	Utensils	Min. 1 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
15	Mixing bowl	of different sizes 2lit to 3lit capacity	2	Yes
16	Work table	4' x 10' SS tables	2	Yes
17	Sinks	with water connection	2	Yes
18	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
19	Thermometer	2 of them should measure about 400 degree Celsius. One of them at below freezing	3	Yes
20	Timer		2	Yes
21	Digital Hygrometer		2	Yes
22	Lab equipment for testing	simple microscope, grinding machine (small size), plate heater	1	No

23	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
24	Packing, wraps rolls	Food grade Aluminum foils	1	Yes
25	Packing, wraps rolls	Food grade HDPE film transparent	1	Yes
26	Aprons	For all students (returnable basis)	30	Yes
27	Cleaning tools		1	Yes
28	Weighing Scale	Min. 5kg	1	Yes
29	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
30	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
31	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	Yes
32	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
33	High speed exhausts	one on each wall of the lab	2	Yes
34	Masks – Head cover, mouth cover	re usable	35	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology / Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology / Food Engineering	2
3	Diploma in Hotel Management /certificate course in baking	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Min. Diploma in Food Technology	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.



(B)

# Tools & Equipment

For  
**Dairy Job Roles**

## Content

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**Job Role : Cottage Cheese Maker**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
6	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
7	Separator/Clarifier		1	No
8	Knives	of all types	2	Yes
9	Spatula	of all sizes	2	Yes
10	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
11	Work table	4' x 10' SS tables	2	Yes
12	Sinks	with water connection	2	Yes
13	Timer		2	Yes
14	Digital Hygrometer		2	Yes
15	Bunsen Burner		1	No
16	Wire Gauze		2	No
17	Test Tubes		5	No
18	Burette		2-3	No
19	Pipette		2-3	No
20	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
21	Weighing Scale	Min. 5kg	1	Yes
22	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
23	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
24	pH Meter		1	Yes
25	Muslin Cloth		2-3	Yes
26	Disinfectant		1	Yes

27	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
28	Masks – Head cover, mouth cover	re usable	30	Yes
29	Gloves		30 Pairs	Yes
30	Lab Coat		30	Yes
31	Measuring Cans		2-3	Yes
32	Feeder		1	No
33	Silos		1	No
34	Mixer		1	Yes
35	Milk Sampling Bottles		2-3	Yes
36	Measuring Cylinder		2	Yes
37	Funnel		2-3	Yes
38	SNF Tester		1	No
39	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Milk Powder Manufacturing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Spray Dryer		1	Yes
4	Blender		1	Yes
5	Refrigerator	100 litres (1kw)	1	Yes
6	Refrigerator	300 litres (1.5kw)	1	No
7	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
8	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
9	Separator/Clarifier		1	No
10	Knives	of all types	2	Yes
11	Spatula	of all sizes	2	Yes
12	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
13	Work table	4' x 10' SS tables	2	Yes
14	Sinks	with water connection	2	Yes
15	Timer		2	Yes
16	Digital Hygrometer		2	Yes
17	Bunsen Burner		1	No
18	Wire Gauze		2	No
19	Test Tubes		5	No
20	Burette		2-3	No
21	Pipette		2-3	No
22	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
23	Weighing Scale	Min. 5kg	1	Yes
24	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
25	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
26	pH Meter		1	Yes
27	Disinfectant		1	Yes

28	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
29	Masks – Head cover, mouth cover	re usable	30	Yes
30	Gloves		30 Pairs	Yes
31	Lab Coat		30	Yes
32	Measuring Cans		2-3	Yes
33	Feeder		1	No
34	Silos		1	No
35	Mixer		1	Yes
36	Milk Sampling Bottles		2-3	Yes
37	Measuring Cylinder		2	Yes
38	Funnel		2-3	Yes
39	SNF Tester		1	No
40	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Butter and Ghee Processing Operator**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Churner		1	Yes
6	Blender		1	Yes
7	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
8	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
9	Separator/Clarifier		1	No
10	Knives	of all types	2	Yes
11	Spatula	of all sizes	2	Yes
12	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
13	Work table	4' x 10' SS tables	2	Yes
14	Sinks	with water connection	2	Yes
15	Timer		2	Yes
16	Digital Hygrometer		2	Yes
17	Bunsen Burner		1	No
18	Wire Gauze		2	No
19	Test Tubes		5	No
20	Burette		2-3	No
21	Pipette		2-3	No
22	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
23	Weighing Scale	Min. 5kg	1	Yes
24	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
25	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
26	pH Meter		1	Yes
27	Disinfectant		1	Yes

28	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
29	Masks – Head cover, mouth cover	re usable	30	Yes
30	Gloves		30 Pairs	Yes
31	Lab Coat		30	Yes
32	Measuring Cans		2-3	Yes
33	Feeder		1	No
34	Silos		1	No
35	Mixer		1	Yes
36	Milk Sampling Bottles		2-3	Yes
37	Measuring Cylinder		2	Yes
37	Funnel		2-3	Yes
39	SNF Tester		1	No
40	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Supervisor: Dairy Product Processing**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Spray Dryer		1	No
6	Blender		1	Yes
7	Churner		1	No
8				
9	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
10	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
11	Separator/Clarifier		1	No
12	Knives	of all types	2	Yes
13	Spatula	of all sizes	2	Yes
14	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
15	Work table	4' x 10' SS tables	2	Yes
16	Sinks	with water connection	2	Yes
17	Timer		2	Yes
18	Digital Hygrometer		2	Yes
19	Bunsen Burner		1	No
20	Wire Gauze		2	No
21	Test Tubes		5	No
22	Burette		2-3	No
23	Pipette		2-3	No
24	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
25	Weighing Scale	Min. 5kg	1	Yes
26	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
27	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes

28	pH Meter		1	Yes
29	Muslin Cloth		2-3	Yes
30	Disinfectant		1	Yes
31	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
32	Masks – Head cover, mouth cover	re usable	30	Yes
33	Gloves		30 Pairs	Yes
34	Lab Coat		30	Yes
35	Measuring Cans		2-3	Yes
36	Feeder		1	No
37	Silos		1	No
38	Mixer		1	Yes
39	Milk Sampling Bottles		2-3	Yes
40	Measuring Cylinder		2	Yes
41	Funnel		2-3	Yes
42	SNF Tester		1	No
43	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Dairy Product Processor**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Spray Dryer		1	No
6	Blender		1	Yes
7	Churner		1	No
8				
9	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
10	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
11	Separator/Clarifier		1	No
12	Knives	of all types	2	Yes
13	Spatula	of all sizes	2	Yes
14	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
15	Work table	4' x 10' SS tables	2	Yes
16	Sinks	with water connection	2	Yes
17	Timer		2	Yes
18	Digital Hygrometer		2	Yes
19	Bunsen Burner		1	No
20	Wire Gauze		2	No
21	Test Tubes		5	No
22	Burette		2-3	No
23	Pipette		2-3	No
24	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
25	Weighing Scale	Min. 5kg	1	Yes
26	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
27	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
28	pH Meter		1	Yes

29	Muslin Cloth		2-3	Yes
30	Disinfectant		1	Yes
31	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
32	Masks – Head cover, mouth cover	re usable	30	Yes
33	Gloves		30 Pairs	Yes
34	Lab Coat		30	Yes
35	Measuring Cans		2-3	Yes
36	Feeder		1	No
37	Silos		1	No
38	Mixer		1	Yes
39	Milk Sampling Bottles		2-3	Yes
40	Measuring Cylinder		2	Yes
41	Funnel		2-3	Yes
42	SNF Tester		1	No
43	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Dairy Processing Equipment Operator**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Spray Dryer		1	No
6	Blender		1	Yes
7	Churner		1	No
8				
9	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
10	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
11	Separator/Clarifier		1	No
12	Knives	of all types	2	Yes
13	Spatula	of all sizes	2	Yes
14	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
15	Work table	4' x 10' SS tables	2	Yes
16	Sinks	with water connection	2	Yes
17	Timer		2	Yes
18	Digital Hygrometer		2	Yes
19	Bunsen Burner		1	No
20	Wire Gauze		2	No
21	Test Tubes		5	No
22	Burette		2-3	No
23	Pipette		2-3	No
24	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
25	Weighing Scale	Min. 5kg	1	Yes
26	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
27	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes

28	pH Meter		1	Yes
29	Muslin Cloth		2-3	Yes
30	Disinfectant		1	Yes
31	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
32	Masks – Head cover, mouth cover	re usable	30	Yes
33	Gloves		30 Pairs	Yes
34	Lab Coat		30	Yes
35	Measuring Cans		2-3	Yes
36	Feeder		1	No
37	Silos		1	No
38	Mixer		1	Yes
39	Milk Sampling Bottles		2-3	Yes
40	Measuring Cylinder		2	Yes
41	Funnel		2-3	Yes
42	SNF Tester		1	No
43	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Job Role : Ice Cream Processing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 500 sq. ft.**

S. No	Equipment Name	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	Yes
2	Homogenizer		1	Yes
3	Refrigerator	100 litres (1kw)	1	Yes
4	Refrigerator	300 litres (1.5kw)	1	No
5	Deep Freezer		1	Yes
6	Blender		1	Yes
7	Churner		1	No
8	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
9	Thermometer	Measuring up to 200 Degree Celsius	3	Yes
10	Separator/Clarifier		1	No
11	Knives	of all types	2	Yes
12	Spatula	of all sizes	2	Yes
13	Utensils	1 to 5 kg capacity SS utensils with lids, 6 – 7 SS plates 12" diameter	5	Yes
14	Work table	4' x 10' SS tables	2	Yes
15	Sinks	with water connection	2	Yes
16	Timer		2	Yes
17	Digital Hygrometer		2	Yes
18	Bunsen Burner		1	No
19	Wire Gauze		2	No
20	Test Tubes		5	No
21	Burette		2-3	No
22	Pipette		2-3	No
23	Lab chemicals for testing and glassware	beaker, test tube, measuring cylinder, Petri dish, glass slides	1	No
24	Weighing Scale	Min. 5kg	1	Yes
25	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
26	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
27	pH Meter		1	Yes

28	Disinfectant		1	Yes
29	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
30	Masks – Head cover, mouth cover	re usable	30	Yes
31	Gloves		30 Pairs	Yes
32	Lab Coat		30	Yes
33	Measuring Cans		2-3	Yes
34	Feeder		1	No
35	Silos		1	No
36	Mixer		1	Yes
37	Milk Sampling Bottles		2-3	Yes
38	Measuring Cylinder		2	Yes
39	Funnel		2-3	Yes
40	SNF Tester		1	No
41	Fat Tester		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering or Dairy technology	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering or Dairy Technology	2
3	Diploma in Food Technology / Food Engineering	5
4	Certificate Course In Dairy Technology	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.

- Replacement of exhaust fan.
- All safety parameters.

(c)

# Tools & Equipment For Fish and Seafood Job Roles

## Content

<b>Job Role</b>	<b>Page No.</b>
<b>Fish and Seafood Processing Technician</b>	<b>3</b>

**Job Role : Fish & Seafood Processing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

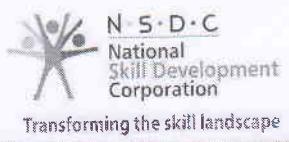
S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Filtering machine		1	Yes
2	Scaling machine		1	Yes
3	Shelling machine		1	Yes
4	Grounding machine		1	Yes
5	Opening machine		1	No
6	Thermoformers		1	No
7	Heat sealers		3-4	No
8	Can closers/ sealers		1-2	No
9	Seam testers		1-2	No
10	Fillers of all type		1-2 each	No
11	Cutting / slitting / trimming equipment		1-2	Yes
12	Typing / sieving/ stapling equipment		1-2	No
13	Closing / sealing equip		1-2	No
14	Form / fill/ seal equip		1-2	No
15	Cappers/ crumpers/ hooders		3-4	No
16	Wrappers		1-2	No
17	Cartoners		1-2	No
18	Multipackers		1-2	No
19	Bundlers		1-2	No
20	Shrink wrappers and tunnels		1-2	No
21	Labellers		1	No
22	Coding equipments		1	No
23	Check weighers		2-3	No
24	Metal detection equipment		1	No
25	Level checking equipment		2	No
26	Code/ lable inspecting equipment		1	No
27	Printing equipment		1	No
28	Palletisers		1-2	No
29	Bottle spotters		1-2	No

30	Aligners		2	No
31	Container cleaning/ washing/ drying systems		1-2	No
32	Accumulator/ collectors		1-2	No
33	Unloaders, stackers		1-2	No
34	Feeding/ orienting equipment		1-2	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Fisheries	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.



Content

(D)

# Tools & Equipment

For

## Fruits and Vegetables

## Content

<b>Job Role</b>	<b>Page No.</b>
Fruits & Vegetable Drying/Dehydration Technician	3
Fruit Pulp Processing Technician	6
Fruit Ripening Technician	10
Canning Technician	14
Fruits and Vegetable Selection In charge	18
Jam, Jelly & Ketchup Processing Technician	20
Pickle Making and Processing Technician	23
Squash & Juice Processing Technician	26

**Job Role : Fruits & Vegetable Drying/Dehydration Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	No
2	Thermometer (Digital)		1	Yes
3	Beakers of different sizes	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each)	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each)	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each)	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each)	No
7	Burette of assorted sizes with burette stands	1 set		No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each)	No
9	Glass funnels of assorted sizes		6pcs	No
10	Test tubes with test tube stand		24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope		1	No
15	Brinometer		2 pcs	No
16	Hydrometer		6 pcs	Yes
17	Weighing balance (Digital with capacity upto 50 kg)		1 pc	Yes
18	Laboratory weighing balance (Digital)		1 pc	Yes

19	Brix meter/refractometer		2 pcs	Yes
20	Deep fridge		1 unit	No
21	Refrigerator		1 unit	Yes
22	Gas burner with cylinder		1 unit	Yes
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	Yes
25	Pilfer proof capping machine		1 pc	No
26	Cutting knives		12 pcs	Yes
27	Electric mixer		1 unit	No
28	Water tank		1 unit	Yes
29	Fruit slicing machine		1 unit	Yes
30	Sealing machine		1 unit	Yes
31	Weighing balance (analogue)		1 unit	No
32	Oven (drying) (0	250 C) digital Display, with auto temperature controller, suitable insulated, fans , heating elements	1 unit	Yes
33	Solar dryer (cabinet type) complete with solar box. Size app 6'*3'		1 unit	Yes
34	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	Yes
35	Steam jacket kettle		2 units	No
36	Baby Boiler/Diesel fuel/capacity of boiler as per capacity of steam jacket kettle		1 unit	No

37	Shredder for slicing of fruit and vegetable		1 unit	Yes
38	Heat Sealing Machine Hand Operated		1 unit	No
39	Moisture meter		1 unit	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Fruit Pulp Processing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	pH Meter (Digital)		1	Yes
2	Thermometer (Digital)		1	Yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope - 1		1	No
15	Brinometer		2 pcs	Yes
16	Hydrometer		6 pcs	Yes
17	Weighing balance (Digital)	With capacity upto 50 kg	1 pc	Yes

18	Laboratory weighing balance (Digital) - 1 pc		1 pc	No
19	Brix meter/refractometer -		2 pcs	Yes
20	Deep fridge -		1	No
21	Refrigerator		1	Yes
22	Gas burner with cylinder		1	Yes
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	Yes
25	Pilfer proof capping machine		1 pc	No
26	Cutting knives		12 pcs	Yes
27	Electric mixer		1 unit	Yes
28	Water tank		1 unit	Yes
29	Fruit slicing machine		1 unit	Yes
30	Sealing machine		1 unit	Yes
31	Weighing balance (analogue)		1 unit	No
32	Vacuum gauge		1 set	No
33	Pressure gauge		1 set	No
34	Seam checking gauge or screw gauge		1 set	No
35	Pressure cooker		1 unit	Yes
36	Coring knives		6 pcs	Yes
37	Pitting knives		6 pcs	Yes
38	Juice Extractor (Screw type)	1 HP motor	1 unit	Yes

39	Lime Juice Extractor & orange juice halving & Burring		1 unit	No
40	Crown corking machine hand operated		1 unit	No
41	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor and two S.S. Seines (1/16 mesh. 1/32 mesh)	1 unit	Yes
42	Fruit mill		1 unit	No
43	Vacuum pan		1 unit	No
44	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	Yes
45	Steam jacket kettle		2 pcs	No
46	Baby Boiler/Diesel fuel/	capacity as per capacity of steam jacket kettle	1 unit	No
47	Exhausting box		1 unit	No
48	Sulphuring chamber		1 unit	No
49	Shredder for slicing of fruit and vegetable	capacity 5kg/hours	1 unit	No
50	Liquid filling machine		1 unit	No
51	Auto claves	50 lit capacity	1 unit	No
52	S.S. Vessels with lids	20 lit capacity	2 pcs	No
53	S.S. Vessels with lids	6 lit capacity	2pcs	No
54	S.S. Vessels with lids	10 lit cap	2 pcs	Yes
55	Micrometre Seam Checking gauge	0.001 LC	1 unit	No
56	Bottle brush washer		1 unit	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Fruit Ripening Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size :400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	Yes
2	Thermometer (Digital)		1	Yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope - 1		1	No
15	Brinometer		2 pcs	No
16	Hydrometer		6 pcs	Yes
17	Weighing balance (Digital)	With capacity upto 50 kg	1 pc	Yes
18	Laboratory weighing balance (Digital) - 1 pc		1 pc	No
19	Brix meter/refractometer -		2 pcs	No

20	Deep fridge -		1	No
21	Refrigerator		1	Yes
22	Gas burner with cylinder		1	Yes
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	No
25	Pilfer proof capping machine		1 pc	No
26	Cutting knives		12 pcs	Yes
27	Electric mixer		1 unit	No
28	Water tank		1 unit	Yes
29	Fruit slicing machine		1 unit	Yes
30	Sealing machine		1 unit	Yes
31	Weighing balance (analogue)		1 unit	No
32	Vacuum gauge		1 set	No
33	Pressure gauge		1 set	No
34	Seam checking gauge or screw gauge		1 set	No
35	Pressure cooker		1 unit	No
36	Coring knives		6 pcs	No
37	Pitting knives		6 pcs	No
38	Juice Extractor (Screw type)	1 HP motor	1 unit	No
39	Lime Juice Extractor & orange juice halving & Burrung		1 unit	No
40	Crown corking machine hand operated		1 unit	No
41	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor	1 unit	No

		and two S.S: Seines (1/16 mesh. 1/32 mesh)		
42	Fruit mill		1 unit	No
43	Vacuum pan		1 unit	No
44	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	No
45	Steam jacket kettle		2 pcs	No
46	Baby Boiler/Diesel fuel/	capacity as per capacity of steam jacket kettle	1 unit	No
47	Exhausting box		1 unit	Yes
48	Sulphuring chamber		1 unit	Yes
49	Shredder for slicing of fruit and vegetable	capacity 5kg/hours	1 unit	Yes
50	Liquid filling machine		1 unit	No
51	Auto claves	50 lit capacity	1 unit	No
52	S.S.Vessels with lids	20 lit capacity	2 pcs	No
53	S.S. Vessels with lids	6 lit capacity	2pcs	No
54	S.S.Vessels with lids	10 lit cap	2 pcs	Yes
55	Micrometer Seam Checking gauge	0.001 LC	1 unit	No
56	Bottle brush washer		1 unit	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2

3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Canning Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	Yes
2	Thermometer (Digital)		1	Yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope – 1		1	No
15	Brinometer		2 pcs	Yes
16	Hydrometer		6 pcs	Yes
17	Weighing balance (Digital)	With capacity upto 50 kg	1 pc	Yes
18	Laboratory weighing balance (Digital) - 1 pc		1 pc	Yes
19	Brix meter/refractometer -		2 pcs	Yes

20	Deep fridge -		1	No
21	Refrigerator		1	Yes
22	Gas burner with cylinder		1	Yes
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	Yes
25	Pilfer proof capping machine		1 pc	No
26	Cutting knives		12 pcs	Yes
27	Electric mixer		1 unit	No
28	Water tank		1 unit	Yes
29	Fruit slicing machine		1 unit	Yes
30	Sealing machine		1 unit	Yes
31	Vacuum gauge		1 set	No
32	Pressure gauge		1 set	No
33	Seam checking gauge or screw gauge		1 set	No
34	Pressure cooker		1 unit	Yes
35	Coring knives		6 pcs	No
36	Pitting knives		6 pcs	No
37	Juice Extractor (Screw type)	1 HP motor	1 unit	No
38	Lime Juice Extractor & orange juice halving & Burring		1 unit	No
39	Crown corking machine hand operated		1 unit	No
40	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor and two S.S:	1 unit	Yes

		Seines (1/16 mesh. 1/32 mesh)		
41	Fruit mill		1 unit	No
42	Vacuum pan		1 unit	No
43	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	No
44	Steam jacket kettle		2 pcs	No
45	Baby Boiler/Diesel fuel/	Capacity of boiler as per capacity of steam jacket kettle	1 unit	No
46	Exhausting box		1 unit	No
47	Sulphuring chamber		1 unit	No
48	Can reforming unit		1 set with 2 seamers	Yes
49	Shredder for slicing of fruit and vegetable	Capacity 5kg/hours	1 unit	No
50	Liquid filling machine		1 unit	Yes
51	Auto claves	50 lit capacity	1 unit	Yes
52	S.S. Vessels with lids	20 lit capacity	2 pcs	No
53	S.S. Vessels with lids	6 lit capacity	2pcs	No
54	S.S. Vessels with lids	10 lit capacity	2 pcs	Yes
55	Micrometer Seam Checking gauge	0.001 LC	1 unit	No
56	Bottle brush washer		1 unit	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Fruits and Vegetable Selection In charge**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	No
2	Thermometer (Digital)		1	No
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope - 1		1	No
15	Brinometer		2 pcs	No
16	Hydrometer		6 pcs	No
17	Weighing balance (Digital)	With capacity upto 50 kg	1 pc	Yes
18	Laboratory weighing balance (Digital) - 1 pc		1 pc	No
19	Bricks meter/refractometer -		2 pcs	No

20	Deep fridge -		1	No
21	Refrigerator		1	No
22	Gas burner with cylinder		1	No
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	No
25	Cutting knives		12 pcs	No
26	Water tank 1 unit		1 unit	No
27	Weighing balance		1 unit	Yes
28	Bucket		2 pcs	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Jam, Jelly & Ketchup Processing Technician**
**Class Room Size: 300 Sq. ft.**
**Lab Size : 400 Sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	Yes
2	Thermometer (Digital)		1	Yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Utensils		5	Yes
7	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
8	Burette with burette stands	Assorted sizes	1 set	No
9	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
10	Glass funnels	Assorted sizes	6 pcs each	No
11	Glass rod		3	No
12	Brinometer		2	Yes
13	Hydrometer		6	Yes
14	Weighing balance (Digital)	With capacity upto 50 kg	1	Yes
15	Laboratory weighing balance (Digital) - 1 pc		1	Yes
16	Brix meter/refractometer		2	Yes
17	Deep fridge		1	No
18	Refrigerator		1	Yes
19	Gas burner with cylinder		1	Yes

20	Stainless steel mug		2	No
21	Cutting knives and Peeler		3 each	Yes
22	Electric mixer		1 unit	Yes
23	Water tank		1 unit	Yes
24	Fruit slicing machine		1 unit	Yes
25	Sealing machine		1 unit	No
26	Weighing balance (analogue)		1 unit	No
27	Seam checking gauge or screw gauge		1 set	No
28	Pressure cooker		1 unit	Yes
29	Coring knives		3	Yes
30	Pitting knives		3	No
31	Pilfer proof capping machine		1	No
32	Juice Extractor (Screw type)	1 HP motor	1 unit	Yes
33	Lime Juice Extractor & orange juice halving & Burrung		1 unit	No
34	Crown corking machine hand operated		1 unit	No
35	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor and two S.S. Seines (1/16 mesh. 1/32 mesh)	1 unit	Yes
36	Fruit mill		1 unit	No
37	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	Yes
38	Steam jacket kettle		2	No
39	Baby Boiler/Diesel fuel/	capacity as per capacity of steam jacket kettle	1 unit	No

40	Exhausting box		1 unit	No
41	Sulphuring chamber		1 unit	No
42	Shredder for slicing of fruit and vegetable		1 unit	Yes
43	Liquid filling machine		1 unit	No
44	Auto claves	20 lit capacity	1 unit	Yes
45	S.S. Vessels with lids	20 lit capacity	2	No
46	S.S. Vessels with lids	6 lit capacity	2	No
47	S.S. Vessels with lids	10 lit cap	2 pcs	No
48	Micrometer Seam Checking gauge	0.001 LC	1 unit	No
49	Bottle brush washer		1 unit	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Pickle Making and Processing Technician**
**Class Room Size: 300 Sq. ft.**
**Lab Size : 300 Sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	PH Meter (Digital)		1	Yes
2	Thermometer (Digital)		1	Yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	No
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
	Utensils		5	Yes
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	10 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope – 1		1	No
15	Brinometer		2	Yes
16	Hydrometer		2	Yes
17	Weighing balance (Digital)	With capacity upto 50 kg	1	Yes

18	Laboratory weighing balance (Digital)	1	No
19	Brix meter/refractometer -	2	Yes
20	Deep fridge -	1	No
21	Refrigerator	1	Yes
22	Gas burner with cylinder	1	Yes
23	Fruit tray	2	No
24	Stainless steel mug	2	Yes
25	Pilfer proof capping machine	1	No
26	Cutting knives and Peelers	3 each	Yes
27	Electric mixer	1 unit	Yes
28	Water tank	1 unit	Yes
29	Fruit slicing machine	1 unit	Yes
30	Sealing machine	1 unit	No
31	Weighing balance (analogue)	1 unit	No
32	Pickle mixer, rotary type and contact part of stainless steel	1 unit	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5

4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Squash & Juice Processing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size :400 sq. ft.**

<b>S. No</b>	<b>List of Equipment</b>	<b>Size / Description</b>	<b>Quantity (Nos.)</b>	<b>Mandatory</b>
1	PH Meter (Digital)		1	yes
2	Thermometer (Digital)		1	yes
3	Beakers	50 ml, 100 ml, 250 ml, 500 ml	6 pcs each	yes
4	Conical flasks	100 ml, 250 ml, 500 ml	6 pcs each	No
5	Measuring cylinder	50 ml, 100 ml, 250 ml	6 pcs each	No
6	Measuring flask	100 ml, 250 ml, 500 ml	6 pcs each	No
7	Burette with burette stands	Assorted sizes	1 set	No
8	Pipettes of assorted sizes	1ml, 5ml, 10 ml	6 pcs each	No
9	Glass funnels	Assorted sizes	6 pcs each	No
10	Test tubes with test tube stand	Assorted sizes	24 pcs	No
11	Glass rod		6 pcs	No
12	Petri dish with cover		12 pcs	No
13	Glass slides		1 box	No
14	Microscope - 1		1	No
15	Brinometer		2 pcs	Yes
16	Hydrometer		6 pcs	Yes
17	Weighing balance (Digital)	With capacity upto 50 kg	1 pc	Yes
18	Laboratory weighing balance (Digital) - 1 pc		1 pc	No

19	Brix meter/refractometer -		2 pcs	Yes
20	Deep fridge -		1	No
21	Refrigerator		1	Yes
22	Gas burner with cylinder		1	Yes
23	Fruit tray		6 pcs	Yes
24	Stainless steel mug		2 pcs	Yes
25	Pilfer proof capping machine		1 pc	No
26	Cutting knives		12 pcs	Yes
27	Electric mixer		1 unit	Yes
28	Water tank		1 unit	Yes
29	Fruit slicing machine		1 unit	Yes
30	Sealing machine		1 unit	Yes
31	Weighing balance (analogue)		1 unit	No
32	Vacuum gauge		1 set	No
33	Pressure gauge		1 set	No
34	Seam checking gauge or screw gauge		1 set	No
35	Pressure cooker		1 unit	No
36	Coring knives		6 pcs	Yes
37	Pitting knives		6 pcs	Yes
38	Juice Extractor (Screw type)	1 HP motor	1 unit	Yes
39	Lime Juice Extractor & orange juice halving & Burring		1 unit	Yes
40	Crown corking machine hand operated		1 unit	No

41	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor and two S.S: Seines (1/16 mesh, 1/32 mesh)	1 unit	Yes
42	Fruit mill		1 unit	No
43	Vacuum pan		1 unit	No
44	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	No
45	Steam jacket kettle		2 pcs	No
46	Baby Boiler/Diesel fuel/	capacity as per capacity of steam jacket kettle	1 unit	No
47	Exhausting box		1 unit	No
48	Sulphuring chamber		1 unit	No
49	Shredder for slicing of fruit and vegetable	capacity 5kg/hours	1 unit	No
50	Liquid filling machine		1 unit	No
51	Auto claves	50 lit capacity	1 unit	Yes
52	S.S.Vessels with lids	20 lit capacity	2 pcs	No
53	S.S. Vessels with lids	6 lit capacity	2pcs	No
54	S.S.Vessels with lids	10 lit cap	2 pcs	Yes
55	Micrometer Seam Checking gauge	0.001 LC	1 unit	No
56	Bottle brush washer		1 unit	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in Fruits and Vegetable processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.

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## Tools & Equipment

(E) For

### Food Grain Milling

## **Content**

<b>Job Role</b>	<b>Page No.</b>
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<b>Pulse Processing Technician</b>	<b>9</b>

**Job Role : Chief Miller**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Separator Machine		1	yes
2	Aspirator		1	yes
3	Disc separator		1	yes
4	Scourer		1	yes
5	Magnetic separator		1	No
6	Washer-stoner		1	yes
7	Conditioning machine		1	yes
8	Drying plant		1	yes
9	Grinding machine		1	yes
10	Sifting machine		1	yes
11	Purifiers		1	yes
12	Packing machine		1	yes
13	Cleaners		As required	yes
14	Hammer Mill		1	Yes
15	Disinfectants		As required	yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Grain Milling	5
4	B.SC food science and quality control	4
5	B.sc home science	5



**Job Role : Grain Mill Operator**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

<b>S. No</b>	<b>List of Equipment</b>	<b>Size / Description</b>	<b>Quantity (Nos.)</b>	<b>Mandatory</b>
1	Separator Machine		1	yes
2	Aspirator		1	yes
3	Disc separator		1	yes
4	Scourer		1	yes
5	Magnetic separator		1	No
6	Washer-stoner		1	Yes
7	Conditioning machine		1	No
8	Drying plant		1	Yes
9	Grinding machine		1	No
10	Sifting machine		1	Yes
11	Purifiers		1	No
12	Packing machine		1	Yes
13	Cleaners		As required	Yes
14	Hammer Mill		1	Yes
15	Disinfectants		As required	Yes

<b>S. No.</b>	<b>Min. Qualification of Trainer</b>	<b>Experience in Relevant Field</b>
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/certificate course in Grain Milling	5
4	B.SC food science and quality control	4
5	B.sc home science	5



**Job Role : Milling Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

<b>S. No</b>	<b>List of Equipment</b>	<b>Size / Description</b>	<b>Quantity (Nos.)</b>	<b>Mandatory</b>
1	Separator Machine		1	Yes
2	Aspirator		1	Yes
3	Disc separator		1	Yes
4	Scourer		1	Yes
5	Magnetic separator		1	No
6	Washer-stoner		1	Yes
7	Conditioning machine		1	No
8	Drying plant		1	Yes
9	Grinding machine		1	Yes
10	Sifting machine		1	Yes
11	Purifiers		1	Yes
12	Packing machine		1	Yes
13	Cleaners		As required	Yes
14	Hammer Mill		1	Yes
15	Disinfectants		As required	Yes

<b>S. No.</b>	<b>Min. Qualification of Trainer</b>	<b>Experience in Relevant Field</b>
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Grain Milling	5
4	B.SC food science and quality control	4

5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Job Role : Pulse Processing Technician**
**Class Room Size: 300 sqft**
**Lab Size : 600 sq. ft.**

S. No.	List of Equipment	Size/Description	Quantity (Nos.)	Mandatory
1	Samples of various Pulses		As required	Yes
2	Cleaner/grader		1	Yes
3	Conditioning machine		1	Yes
4	De-husk machine		1	Yes
5	Splitter machine		1	Yes
6	Polisher		1	Yes
7	Drier		1	Yes
8	Packaging machine		1	Yes
9	Grinding machine		1	Yes
10	Sifter		1	Yes
11	Cleaners		As required	Yes
12	Disinfectants		As required	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma/ Hotel Management /certificate course in pulse Processing	5
4	B.SC food science and quality control	4

5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.

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# Tools & Equipment

For

## Meat and Poultry Job Roles

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<b>Job Role</b>	<b>Page No.</b>
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<b>Offal Collector</b>	<b>5</b>

**Job Role : Supervisor: Meat and Poultry Processing**
**Class Room Size: 300 sq. ft.**
**Lab Size : 1000 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Stomacher Blender		1	Yes
2	Tissue Homogenizer		1	Yes
3	Vacuum Packing Machine		1	No
4	Sausage Clipping Machine		1	Yes
5	Meat Slicer		2	No
6	Meat Mincer		1	Yes
	Knife		3	Yes
	Injector		1	Yes
7	Deep Fryer		1	Yes
8	Vortex Mixer		1	Yes
	Sanitizer		1	Yes
9	Refrigerated Centrifuge		1	No
10	Test Tube		10	No
11	Pipette		2-3	No
12	Burette		2-3	No
13	Microscope		2-3	No
14	pH Meter		1	Yes
15	Micro fluidizer		1	No
16	Water Activity Meter		1	Yes
17	Beaker		2	Yes
18	BOD Incubator		1	Yes
19	Lab coats		30	Yes
20	Mask		30	Yes
21	Safety Gloves		30 Pairs	Yes
22	Desiccator		2-3	Yes
23	Kjeldhal Digestion Unit	Workable on single phase 220/230 volts A.C supply	1	No
24	Extruder		1	Yes
25	Deep Freezer		1	Yes

26	Autoclave	22L Capacity	1	Yes
27	Disinfectant		1	Yes
28	Work Table		2	Yes
29	Casings			Yes
30	Deep Fridge		1	Yes
31	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
32	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
33	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
34	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
35	High speed exhausts	one on each wall of the lab	2	Yes
36	Soxhlet Extraction Unit	3 test mantle type with 3 energy regulators	1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Meat and Poultry Processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Job Role : Offal Collector**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Stunning Machine		1	Yes
2	Refrigerator		1	Yes
3	Knife	Of various size	2-3	Yes
4	Trays	Of various size	5	Yes
5	Work Table	4' x 10' SS tables	2	Yes
6	Water spraying machine		1	No
7	De-Sliming Machine		1	No
8	Beakers		2-3	Yes
9	Lab Chemicals		1	Yes
10	Conveyor		1	No
11	Crusher		1	Yes
13	Centrifuge		1	No
14	Screw press		1	No
15	Head and Face Mask		30	Yes
16	Gloves		30 pair	Yes
17	Sanitizers		2	Yes
18	Pulveriser		1	Yes
19	Dryer		1	No
20	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
21	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2

3	Diploma /certificate course in Meat and Poultry Processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.

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## Tools & Equipment

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For

## Miscellaneous Job Roles

## Content

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**Job Role : Asst. Food Lab Technician**
**Class Room Size: 300sq. ft.**
**Lab Size : 600 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens			Yes
2	Markers			Yes
3	Flip charts			Yes
4	Post-its			Yes
5	White board			Yes
6	A4 sheets			Yes
7	Projector			Yes
8	Computers	With software like ERP and MS Office	6	Yes
9	Test tubes		10	Yes
10	Round bottom flasks		5	Yes
11	Wire gauges		5	Yes
12	Bunsen burner		5	Yes
13	Mortar and pestle		2	Yes
14	Funnels		5	Yes
15	Gloves		10 pairs	Yes
16	Masks		10	Yes
17	Lab coats		10	Yes
18	Vernier callipers		5	Yes
19	Beakers		10	Yes
20	Flasks		5	Yes
21	Oven Universal	300 x 300 x 300 mm	1	Yes
22	Rectangular Muffle Furnace	100 x 100 x 225 mm	1	No
23	Water Still Automatic Wall Type	4 KW, 220 V AC	1	No
24	pH Metre		1	Yes
25	Infrared Moisture Balance	5/10/25 gm capacity	1	Yes
26	Sieve Shaker	Workable on single phase 220/230 volts A.C supply	1	Yes
27	Autoclave (Vertical)	22 L capacity	1	No

				No
28	Colony Counter (Electronic Digital)	With 3 digit display	1	
29	B.O.D Incubator	2 cubic feet capacity	1	No
30	Research Inclined Monocular Microscope		1	No
31	Soxhlet Extraction Unit	3 test mantle type with 3 energy regulators	1	No
32	Laboratory Round Heating Plate	Workable on single phase 220/230 volts A.C supply	1	
33	Heating Mantles	500-2000 mL	1	No
34	Water Bath (Rectangular)	300 x 250 x 100 mm	1	No
35	Kjeldhal Digestion Unit	Workable on single phase 220/230 volts A.C supply	1	
36	Laminar Air Flow Bench	2' x 2' x 2'	1	No
37	Hand Refractrometer		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Technology	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering or Catering Technology	4

**Job Role : Cold Storage Technician**
**Class Room Size: 300sq. ft.**
**Lab Size : 800 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Ammonia Compressors Double Cylinder		1-2	Yes
2	Ammonia Compressors Multi Cylinder		1-2	No
3	Ammonia Air Cooling Units		1-2	Yes
4	Fin Type Ammonia Air Cooling Units		1-2	No
5	Ammonia Condensing Unit		1-2	Yes
7	Ice Cans		2-3	Yes
8	Insulated Doors		1-2	Yes
9	Hand Hoist		1-2	Yes
10	Agitators		1-2	No
11	Valves		1-2	No
12	Ammonia Compressors		1-2	Yes
15	Pistons		1-2	No
16	Crank Shaft		1-2	No
17	Connecting Rods		1-2	No
18	Compressor shaft seal		1-2	No
19	Water Jacket		1-2	No
20	Manifold		1-2	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3

2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Cold Storage	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Food Products Packaging Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity	Mandatory
1	Wrapper		2-3	Yes
2	Flow wrapper		2	Yes
3	Sorters		2	Yes
4	Bag sealers		3	Yes
5	Cartoner		3	Yes
6	Box formers and closers		3	Yes
7	Labellers like pressure sensitive labelling systems		2	No
8	Wrapping machines		2	Yes
9	Vacuum Packaging machines		1	No
10	Shrink packaging equipment		1	Yes
11	Rolling racks and trays		4	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Packaging	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Modified Atmosphere Storage Technician**
**Class Room Size: 300sq. ft.**
**Lab Size : 500 sq. ft.**

<b>S. No</b>	<b>List of Equipment</b>	<b>Size / Description</b>	<b>Quantity (Nos.)</b>	<b>Mandatory</b>
1	CO2-scrubbers		1	No
2	Ethylene converters		1	No
3	Control System		1	No
4	Humidity controller		1	Yes
5	Gas-tight cool cells		1	No
6	Evaporators/Air handlers		1	No
7	Compressors/Condensers		1	No
8	PLC controls		1	No
9	Temperature monitors		1	No
10	Fire Detection, fighting equipment		As per Safety norms	No
11	Docks – staging and receiving		1	No
12	Ante-rooms		1	No
13	Racking, bins, crates		5-10	No
14	Gas generator – nitrogen generator		1	No
15	Storage Bins		5-6	No
16	Specialised Gas tight doors		1-2	No
17	Temperature controller		1	No

<b>S. No.</b>	<b>Min. Qualification of Trainer</b>	<b>Experience in Relevant Field</b>

1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in MAP	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Purchase Assistant**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens		As per the batch strength	Yes
2	Computer	With ERP and MS Office	6	Yes
3	Markers		3-4	Yes
4	Flip charts		3-4	Yes
5	Post-its		2-3 Packets	Yes
6	White board		1-2	Yes
7	A4 sheets		1 Rim	Yes
12	Projector		1	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Purchase	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Packing Machine Worker**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity	Mandatory
1	Digital Balance		1	Yes
2	Paper/Paperboard			Yes
3	Digital Micrometre		2	Yes
4	Desiccator		2	Yes
5	Head Space Analyser		1	No
6	Tear Strength Tester		1	No
7	Stiffness Tester		1	No
8	Folding Endurance Tester		1	No
9	Water Bath		2	No
10	Wire Basket		1	No
11	Ethylene Analyser		1	No
12	Shrink Wrap Machine		1	Yes
13	Conveyor		1	No
14	Wrapping machines		1	Yes
15	Vacuum Packaging machines		1	No
16	Cartons		3	Yes
17	Sealer		1	Yes
18	Labellers like pressure sensitive labelling systems		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Packaging	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Food Microbiologist**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity	Mandatory
1	Microscope		5	Yes
2	Autoclave	22 L Capacity	1	Yes
3	Hot Air Oven	Electrical, 2 Deck Oven, 4 Tray (3kw each)	1	Yes
4	Colorimeter		1	Yes
5	Centrifuge		1	Yes
6	pH Metre		2	Yes
7	Colony Counter	With 3 Digit Display	2	Yes
8	Incubator		1	Yes
9	Slides		1 box	Yes
10	Petri dish		12 Pc	Yes
11	Pipette	1ml 5ml 10ml	3	Yes
12	Bunsen Burner		2	Yes
13	Vortex		2	Yes
14	Blotting Paper			Yes
15	Beaker	50 ml, 100 ml, 250 ml, 500 ml	6Pc each	Yes
16	Burette		1	Yes
17	Measuring Cylinder	100ml 250 ml 500 ml	6pc Each	Yes
18	Funnel		3	Yes
19	Laminar Flow Cabinet	2' x 2' x 2'	1	Yes
20	Spatula	Of All Size	3	Yes
	Conical Flask		5	Yes
21	Water Bath	300 x 250 x 100 mm	1	Yes
	Sanitizer		2	Yes
22	Spectrophotometer		1	No
23	Cuvets		5	No
24	Weighing Balance		1	Yes
25	Glass Rod		6 Pc	Yes

26	Lab Coat		30	Yes
27	Work Table	4' x 10' SS tables	2	Yes
28	Refrigerator		1	Yes
29	Deep Fridge		1	Yes
30	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
31	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
32	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	Yes
33	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
34	High speed exhausts	one on each wall of the lab	2	Yes
35	Masks – Head cover, mouth cover	re usable	35	Yes
36	Various Lab Chemicals		Depending upon the type and nature of test	Yes
37	Aluminium Foil		2 Box	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Microbiology/Microbiology	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Production Manager**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pasteurizer		1	No
2	Industrial Oven		1	No
3	Spray Dryer		1	No
4	Homogenizer		1	No
5	Holding Tank		1	No
6	Churner		1	No
7	Grain Miller		1	No
8	Commercial Mixers	Min. 2 kg capacity (electrical 300w each)	2	No
9	Baking Pan	Loaf pan, Pie pan, cake Pan (electrical 300w each)	2	No
10	Planetary Mixer		1	No
11	Filtering machine		1	No
12	Scaling machine		1	No
13	Shelling machine		1	No
14	Grounding machine		1	No
16	Opening machine		1	No
17	Form / fill/ seal equip		1-2	No
18	Grinder		1	No
19	Extruder		1	No
20	Pulper Electric	1/4 Tonne capacity per 8 hrs with 1 HP Motor and two S.S: Seines (1/16	1 unit	No

		mesh. 1/32 mesh)		
21	Mechanical peeler/ Batch type for fruit and vegetable peeling		1 unit	No
22	Steam jacket kettle		2 pcs	No
23	Baby Boiler/Diesel fuel/	capacity as per capacity of steam jacket kettle	1 unit	No
24	Shredder for slicing of fruit and vegetable	capacity 5kg/hours	1 unit	No
25	Liquid filling machine		1 unit	No
26	Freeze Drying System		1	No
27	Conveyor System		1	No
28	Bottle brush washer		1 unit	No
29	Computer		2	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	B.SC food science and quality control	4
4	Diploma in Food Technology / Food Engineering	4

**Job Role : Industrial Production Worker**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Coat and Aprons		35	Yes
2	Ear Plug or Muffs		35	Yes
3	Eye and Facial Protection		35	Yes
4	Head Wear		35	Yes
5	Protective Boot Covers		35	Yes
6	Protective hand and arm covering		35	Yes
7	Protective head and hair covering		35	Yes
8	Work uniforms		35	Yes
9	Safety and waterproof footwear		35	Yes
10	Containers		5	Yes
11	Utensils		2 Set	Yes
12	Hand Tools		1 Set	Yes
13	Lifting Aids		1	Yes
14	Stacking equipment		1	Yes
15	Processing unit		1	Yes
16	Conveyor and processing belts		1	No

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Technology	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Job Role : Processed Food Entrepreneur**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens		As per the batch strength	Yes
2	Computer	With MS Office	6	Yes
3	Markers		3-4	Yes
4	Calculator		6	Yes
5	Folders		6	Yes
6	White board		1-2	Yes
7	A4 sheets		1 Rim	Yes
8	Projector		1	Yes
9	Work Table		2	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Technology	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Food Regulatory Affairs Manager**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens		As per the batch strength	Yes
2	Computer	With MS Office	6	Yes
3	Markers		3-4	Yes
4	Calculator		6	Yes
5	Folders		6	Yes
6	White board		1-2	Yes
7	A4 sheets		1 Rim	Yes
8	Projector		1	Yes
9	Work Table		2	Yes
10	Documents related to food safety	ISO, HACCP, FSSAI	2	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Regulations	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Plant Manager**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens		As per the batch strength	Yes
2	Computer	With MS Office	6	Yes
3	Process Flow Charts		Based on various processes	Yes
5	Folders		6	Yes
6	White board		1-2	Yes
7	A4 sheets		1 Rim	Yes
8	Projector		1	Yes
9	Work Table		2	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	B.SC food science and quality control	4
4	Diploma in Food Technology / Food Engineering	4

**Job Role : Quality Assurance Manager**
**Class Room Size: 300 sq. ft.**
**Lab Size : 300 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pencils/Pens		As per the batch strength	Yes
2	Computer	With MS Office	6	Yes
3	Process Flow Charts		Based on various processes	Yes
4	Calculator		2	Yes
5	Folders		6	Yes
6	White board		1-2	Yes
7	A4 sheets		1 Rim	Yes
8	Projector		1	Yes
9	Work Table		2	Yes
10	Markers		5	Yes
11	Chart paper		As per batch size	Yes
12	Trainers Guide		2 sets	Yes
13	Student Handbook		As per batch size	Yes
14	Quality Manual		As per batch size	Yes
15	Audit Documents		As per batch size	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3

2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Quality Control	5
4	B.SC food science and quality control	4
5	Diploma in Food Technology / Food Engineering	4

**Job Role : Spice Processing Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 600 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Grinder		1	Yes
2	Hammer Mill		1	No
3	Pulveriser		1	No
4	Sifter		1	Yes
5	Mortar and Pestle		1	No
6	Pounding machine		1	No
7	De stoner		1	No
8	Conveyor		1	Yes
9	Roaster		1	Yes
10	Dryer		1	Yes
11	Masks – Head cover, mouth cover	Re Usable	35	Yes
12	Lab Coat		35	Yes
13	Weighing Balance		2	Yes
14	Beakers		5	No
15	Sink		2	Yes
16	Packing, wraps rolls	Polypropylene or cellulose	1	Yes
17	Work Table		2	Yes
18	Spice Blender		1	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Spice Processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Job Role : Traditional Snack and Savoury Maker**

**Class Room Size: 300 sq. ft.**

**Lab Size : 600 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Peeler		3	Yes
2	Washer and De stoner		1	Yes
3	Cutter		3	Yes
4	Knife		5	Yes
5	Extruder		1	Yes
6	Automatic Fryer		1	Yes
7	Frying Pan (Flat Base Kadhai)		1	Yes
8	Frying Pan (Round Base Kadhai)		1	Yes
9	Air Cooling System		1	No
10	Spray System		1	No
11	Seasoning System		1	No
12	Oil and Flavour Spray System		1	No
13	Weighing Balance		1	Yes
14	Packing Wrap Rolls		2	Yes
15	Different type of strainer		4	Yes
16	Ladle		5	Yes
17	Sieve		2	Yes
18	Sauce Pan		3	Yes
19	Rolling Pin		2	Yes
20	Cutter		3	Yes
21	Muslin Cloth		2	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Technology	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Job Role : Convenience Food Maker**
**Class Room Size: 300 sq. ft.**
**Lab Size :600 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Pulveriser		1	Yes
2	Kneader		1	Yes
3	Mixer		1	Yes
4	Roaster		1	Yes
5	Dryer		1	Yes
6	Oven		1	No
7	Flaker		1	No
8	Extruder		1	Yes
9	Sieving machine		1	Yes
10	Conveyor		1	No
11	Refrigerator		1	Yes
	Hygrometer		1	Yes
12	Utensils		2 Sets	Yes
13	Packing, wraps rolls	Food grade Aluminium foils	1	Yes
14	Packing, wraps rolls	Food grade HDPE film transparent	1	Yes
15	Mixing bowl	of different sizes 2lit to 3lit capacity	3	Yes
16	Work table	4' x 10' SS tables	2	Yes
17	Sinks	with water connection	4	Yes
18	Measuring Cup & spoon	1 set is of 10 ml, 50 ml, 100 ml, 250 ml, 500 ml	2	Yes
19	Heat resistant Gloves, Protective Gloves	Set of one dozen @ Rs. 500/ per dozen	1	Yes
20	Lab Coats		30	Yes
21	Fire extinguishers	near the gas burner, LPG cylinders and ovens	5	Yes
22	Hand Sealer		1	Yes
23	High speed exhausts	one on each wall of the lab	4	Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Food Technology	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.

(H)

# Tools & Equipment

(H)

For

## Soya Food Job Roles

## **Content**

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<b>Soya Beverage Making Technician</b>	<b>3</b>

**Job Role : Soya Beverage Making Technician**
**Class Room Size: 300 sq. ft.**
**Lab Size : 400 sq. ft.**

S. No	List of Equipment	Size / Description	Quantity (Nos.)	Mandatory
1	Sieve		1	Yes
2	Pasteurizer		1	Yes
3	Homogenizer		1	Yes
4	Blender		1	Yes
5	Separator		1	No
6	Hygrometer			
7	Dehuller		1	Yes
8	Weighing Balance		2	Yes
9	Beaker	50 ml, 100 ml, 250 ml, 500 ml	6Pc each	Yes
10	Spatula		2-3	Yes
11	Grinder		1	Yes
12	Muslin Cloth		2-3	Yes
13	Gas Burner (LPG)	attached to LPG commercial cylinder	1	Yes
14	LPG cylinders	each cylinder should run for 120 hrs (refill cost@Rs1500/ per cylinder)	2	Yes
15	Fire extinguishers	near the gas burner, LPG cylinders and ovens	2	Yes
16	Work Table	4' x 10' SS tables	2	Yes
17	Lab coats		30	Yes
18	Hand Gloves		30 Pairs	Yes
19	Utensils			Yes

S. No.	Min. Qualification of Trainer	Experience in Relevant Field
1	B.Sc or graduate/B.Tech/BE in Food Technology or Food Engineering	3
2	M.Sc/M.Tech/ME in Food Technology or Food Engineering	2
3	Diploma /certificate course in Soya Processing	5
4	B.SC food science and quality control	4
5	B.sc home science	5
6	Diploma in Food Technology / Food Engineering	4

**Note:** The following requirements are mandatory-

- Electricity bill of last 3 months.
- Proper power backup.
- Proper exhaust.
- Proper wiring, covering and earthing.
- Proper lightning.
- Proper storage for raw material.
- Proper lab equipment.
- Replacement of exhaust fan.
- All safety parameters.