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PART II

Statutory Notifications (S.R.O.)

GOVERNMENT OF PAKISTAN

FOOD AND AGRICULTURE DIVISION

NOTIFICATION

Islamabad, the 12th March, 1991

S. R. O. 268 (I) 91.—In exercise of the powers conferred by section 29 of the Seed Act, 1976 (XXIX of 1976), read with section 10 thereof, the Federal Government is pleased to make the following rules, namely :-

1. **Short title and commencement.**—(1) These rules may be called the Seeds (Truth-in-Labeling) Rules, 1991.

(2) They shall come into force at once.

2. **Definitions.**—In these rules, unless there is anything repugnant in the subject or context,—

- (a) "germination" means the emergence and development from the seed of those essential structures which indicate the ability of the embryo to develop into a normal plant;
- (b) "inert matter" means all non-seed material such as chaff, dirt, stones, fungus bodies and seed materials as specified in schedule-I; and
- (c) "schedule" means the schedule annexed to these rules.

(699)

[2816/Ex. Gaz.]

3. Seed to conform to the standards.—(1) Only pure seed as specified in schedule-I shall be offered for sale in Pakistan or for export.

(2) All seed offered for sale in Pakistan or for export shall carry a label on each container for the purpose of reflecting quality of seed not below the standards as given in Schedule-II :

Provided that these standards may be relaxed by the Federal Government under abnormal seed supply situation for a particular period of time.

4. Method of drawing samples.—Samples shall be drawn as specified in Schedule-III.

5. Marking and labelling.—(1) The marking or labelling information shall be shown conspicuously, legibly and indelibly in English or Urdu on the label to be affixed, printed, stencilled or embossed on the exterior surface of the seed containers.

(2) The label shall carry the following information on it :—

Lot No.

Crop|Species.

Variety.

Pure seed %.

Germination %.

Other crop seeds %.

Weed seed %.

Inert matter %.

Month|Year of production.

Date of expiry.

(3) The label shall be affixed to a bag or sack or a container. In case of seed in paper packet or tin type containers, the information under sub-rules (1) and (2) shall be printed on a conspicuous place of such packets or seed containers.

(4) The seed container shall carry the name of the person or company who produces or packs and markets the seed.

(5) Net weight of the seed shall be clearly indicated on the seed container.

6. Units of measurement.—All units of measurement on the label shall be in accordance with the metric system.

7. Seed treatment.—Seed treated with chemicals shall be marked with precautionary symbol which shall prominently be displayed on seed containers in red as "POISON". The generic and common name of such chemicals shall also be given on the seed container.

8. **Import of seed.**—All imported seed shall bear a label with the following information:—

Lot No.
Crop/Species.
Variety.
Quantity.
Purity %.
Germination %.
Other seed %.
Month/Year of production.
Date of expiry.

DR. IMTIZAJ HUSAIN,
Agricultural Development Commissioner,
Ex-Officio Additional Secretary.

[F. 2-9/88-SP.]

Schedule-I

[See Rules -3 (1)]

Pure Seed

The pure seed shall refer to the species stated by the vendor, or found to predominate in the test, and shall include all botanical varieties and cultivars of that species. The following structures (even if immature, undersized, shrivelled, diseased or germinated, provided they can be definitely identified as that species) shall be regarded as pure seed:

- (a) Intact seeds (in the botanical sense).
- (b) Achenes and similar fruits, schizocarps and mericarps, with or without perianth and regardless of whether they contain a true seed.
- (c) Clusters of Beta which are retained on a 200×300 mm rectangular sieve with square-ended slits 1.5×20 mm when shaken for one minute.
- (d) Pieces of seeds, achenes, mericarps and caryopsis resulting from breakage, that are more than one half of their original size.
- (e) Florets and caryopsis of Gramineae as follows:
 - (i) Florets and one-flowered spikelets with an obvious caryopsis containing endosperm, provided that the caryopsis of particular genera have attained minimum size of one third or more of the length of palea measured from the base of rachilla is regarded as pure seed or other seed in case of *Lolium*, *Festuca* and *Agropyron repens*. In other genera or species a floret with any endosperm in the caryopsis is regarded as pure seed.

- (f) Pure seed as defined for the uniform blowing method is given below :—

Blowing.—Set the blower at the blowing point obtained with the uniform calibration sample. Place the working sample into the cup and blow for exactly 3 minutes.

Separation of the heavy fraction.—All seed units under analysis remaining in the cup after blowing are to be classified as pure seed including :

- (a) Florets with fungus bodies, such as ergot entirely enclosed within lemma and palea.
- (b) Florets and free caryopsis (lemma and palea missing) that are insect damaged or diseased including caryopsis which are spongy, corky, white or crumbly.
- (c) Broken florets, pieces of seed, achenes, mericarps and caryopsis larger than one half of their original size.

Inert matter shall include seeds, seed like structure and other matter as follows :—

- (1) Seed and seed like structure :

(A) Pieces of broken or damaged seed, achenes, mericarps and caryopsis, $\frac{1}{2}$ of the original size or less. Seeds of leguminosae, cruciferae, coniferae with seed coats entirely removed and structures in which it is readily apparent that no true seed is present.

(B) Clusters of Beta which pass through a sieve 200×300 mm rectangular with square ended slits 1.5×20 mm when shaken for 1 minute.

(C) Florets, caryopsis etc. of gramineae :

I. Empty glumes, lemmas, paleas, unattached sterile florets less than the minimum size of $\frac{1}{3}$ of palea measured from the base of rachilla and in LOLIUM, FESTUCA, AGROPYRON repens. In other genera or species of florets without endosperm in the caryopsis

II. Inert matter as defined for the uniform blowing is given below :—

Blowing.—Set the blower at the blowing point obtained with the uniform calibration sample. Place the working sample into the cup and blow for exactly 3 minutes :—

- (a) *Separation of the light fraction.*—(i) The light fraction comprises seed units and other material removed by blowing at the uniform blowing point.

(ii) All *Poa pratensis* or *Dactylis glomerata* florets and caryopsis contained in the light fraction shall be considered as inert matter.

(b) Separation of the heavy fraction.—Classify the following *Poa pratensis* or *Dactylis glomerata* florets and caryopsis as inert matter:

- (1) Florets with ergot exerted from the tip of the floret.
- (2) Broken florets and caryopsis, half or less than half the original size.
- (3) Other seeds (including other *Poa* spp.) sticks, stems, sand etc.

(D) Other matter, soil, sand, stones, chaff, stems, leaves, one Scales, wings, pieces of bark, flowers, nematode, galls, fungus bodies (such as ergot, other sclerotia and smut balls), caryopsis of gramineae replaced by insect larvae and all other matters not seeds.

Objectionable weeds/Noxious weeds

Name of crops	Objectionable weeds	Noxious weeds
1	2	3
Wheat	<i>Melilotus indica</i>	<i>Asphodelus tenuifolius</i>
Barley	<i>Chenopodium album</i>	<i>Galium aparine</i>
Triticale	<i>Euphorbia helioscopia</i>	<i>Cirsium arvense</i>
	<i>Phalaris minor</i>	<i>Convolvulus arvensis</i>
	<i>Avena fatua</i>	<i>Carthamus oxyacantha</i>
	<i>Medicago spp.</i>	
	<i>Funaria indica</i>	
	<i>Vicia sp.</i>	
	<i>Lathyrus aphaca</i>	
Cotton	<i>Sorghum halepense</i>	<i>T. portulacastrum</i>
Maize	<i>Digera muricata</i>	<i>Xanthium strumarium</i>
	<i>Convolvulus arvensis</i>	<i>Cucumis callosus</i>
	<i>Ipomoea hispida</i>	
	<i>Dactyloctenium aegyptium</i>	
	<i>Echinochloa colona</i>	
Pearl millet	<i>Sorghum halepense</i>	
Sesame	<i>Digera muricata</i>	
Sorghum	<i>Convolvulus arvensis</i>	
	<i>Ipomoea hispida</i>	
	<i>Dactyloctenium aegyptium</i>	
	<i>Echinochloa colona</i>	

1	2	3
Paddy	<i>Oryza sativa</i> var <i>fatua</i> <i>Cyperus iria</i> <i>Echinochloa colona</i>	<i>Echinochloa crusgalli</i> <i>Fimbristylis littoralis</i> <i>Cyperus difformis</i> <i>Scirpus maritimus</i>
Gram/Chickpea	<i>Lathyrus aphaca</i>	<i>Carthamus oxyacantha</i>
Lentil	<i>Heliotropium</i> sp. <i>Vicia</i> Sp. <i>Fumaria Indica</i> <i>Euphorbia helioscopia</i>	
Rape	<i>Carthamus oxyacantha</i>	<i>Argemone mexicana</i>
Mustard	<i>Sisymbrium irio</i> <i>Asphodelus tenuifolius</i> <i>Lathyrus aphaca</i> <i>Anagallis arvensis</i> <i>Capsella bursa-pastoris</i> <i>Lepidium</i> sp.	<i>Convolvulus arvensis</i>
Potato	<i>Solanum nigrum</i> <i>Trianthema portulacastrum</i> <i>Euphorbia helioscopia</i> <i>Chenopodium</i> spp. <i>Coronopus didymus</i> <i>Anagallis arvensis</i>	<i>Orobancha</i> sp.
Cabbage	<i>Poa annua</i>	
Lettuce	<i>Chenopodium</i> spp.	
Fenugreek	<i>Fumaria indica</i> <i>Vicia</i> Spp. <i>Rumex dentatus</i> <i>Euphorbia helioscopia</i> <i>Polygonum</i> sp. <i>Mellilotus indica</i> <i>Medicago</i> spp. <i>Trigonella</i> sp. <i>Portulaca oleracea</i> <i>Trifolium</i> sp. <i>Stellaria media</i> <i>Anagallis arvensis</i>	
Cucurbits	<i>Citrullus colocynthis</i>	
Beet root	<i>Coronopus didymus</i>	
Turnip	<i>Rumex dentatus</i>	
Raddish	<i>Capsella bursa-pastoris</i>	
Carrot	<i>Lathyrus aphaca</i>	

1	2	3
Peas	<i>Vicia</i> spp. <i>Chenopodium</i> spp. <i>Melilotus indica</i> <i>Poa annua</i> <i>Euphorbia helioscopia</i> <i>Polygonum plebeium</i> <i>Anagallis arvensis</i> <i>Stellaria media</i>	
Pepper	<i>Digitaria</i> sp.	<i>Solanum nigrum</i>
Tomato	<i>Setaria</i> spp.	<i>Orobancha</i> sp.
Brinjal	<i>Eragrostis</i> sp.	
Okra	<i>Amaranthus</i> sp. <i>Digera arvensis</i> <i>Dactyloctenium aegyptium</i> <i>Tribulus terrestris</i> <i>Coronopus didymus</i> <i>Fumaria indica</i> <i>Euphorbia helioscopia</i> <i>Anagallis arvensis</i> <i>Medicago</i> sp. <i>Sonchus</i> spp. <i>Lathyrus aphaca</i> <i>Trianthema portulacastrum</i> <i>Brachiaria</i> sp.	
Onion	<i>Poa annua</i>	<i>Caserta</i> sp.
Garlic	<i>Polypogon</i> sp.	
Coriander	<i>Polygonum plebeium</i>	
Spinach	<i>Fumaria indica</i> <i>Melilotus indica</i> <i>Rumex dentatus</i> <i>Coronopus didymus</i> <i>Anagallis arvensis</i>	
Cowpeallobia	<i>Digitaria</i> sp.	<i>Rhynchosia capitata</i>
Dolichos bean	<i>Digera muricata</i>	
French bean	<i>Eleusine indica</i>	
Cluster bean	<i>Dactyloctenium aegyptium</i>	
Barseem, Alfalfa	<i>Rumex dentatus</i> <i>Coronopus didymus</i> <i>Plantago</i> sp. <i>Euphorbia helioscopia</i> <i>Euphorbia hirta</i>	<i>Cichorium intybus</i> <i>Caserta</i> sp.

-1-	-2-	3
Sunflower	<i>Solanum surrattense</i> <i>Convolvulus arvensis</i> <i>Carthamus oxyacantha</i> <i>Rhynchosia capitata</i> (Spring) <i>Helianthus</i> Sp. <i>Sorghum halepense</i> <i>Digera arvensis</i>	
Safflower	<i>Convolvulus arvensis</i> <i>Chenopodium</i> Spp. <i>Asphodelus tenuifolius</i> <i>Chrysium arvense</i> <i>Sonchus</i> spp.	<i>Carthamus oxyacantha</i>
Groundnut	<i>Eragrostis</i> Sp. <i>Sorghum halepense</i> <i>Celosia argentea</i> <i>Convolvulus arvensis</i>	<i>Phynchosia capitata</i> <i>Tribulus terrestris</i>
Jute	<i>Corchorus trilocularis</i> <i>Malvastrum</i> sp. <i>Impomoea</i> sp. <i>Digitaria</i> sp. <i>Echinochloa crusgalli</i> <i>Digera arvensis</i> <i>Dactyloctenium aegyptium</i>	
Mash, Moth, Mung	<i>Digitaria</i> sp. <i>Dactyloctenium aegyptium</i> <i>Digera muricata</i> <i>Crotalaria medicaginea</i> <i>Rhynchosia capitata</i>	<i>Vigna trilobata</i>

SCHEDULE II

[See Rule-3 (2)-]

MINIMUM SEED STANDARDS FOR TRUTH-IN-LABELLING

Crop	Purity minimum %	Inert matter %	Other crop seeds & weed seed maximum %	Objection- able/No- xious weeds maximum %	Germina- tion minimum maximum %
1	2	3	4	5	6
Cereal Crops					
Barley	97.0	2.1	0.1	0.05	75
Barley Hybrid	97.0	2.1	0.1	0.05	75
Paddy	97.0	2.0	0.2	0.05	75

1	2	3	4	5	6
Paddy Hybrid	97.0	2.0	0.2	0.05	75
Wheat & Wheat Hybrid	97.0	2.0	0.1	0.05	75
Triticale	97.0	2.0	0.1	0.05	75
Fibre Crops					
Cotton	96.0	2.0	0.2	0.1	65
Jute	96.0	2.0	0.2	0.01	70
Forage Crops.					
Berseem	97.0	2.0	0.1	None	70
Forage Sorghum including Sudam Grass	96.0	3.0	0.1	0.05	70
Guar (Cluster bean)	97.0	2.0	0.1	0.05	65
Indian Clover (Senji)	97.0	2.0	0.1	None	60
Lucerne	97.0	2.0	0.1	None	70
Napier Grass	97.0	2.0	0.1	0.05	70
Oats	97.0	2.0	0.2	0.05	70
Teosinte	97.0	2.0	0.2	0.05	70
Millets					
Maize Hybrid	97.0	2.0	None	None	75
Maize open pollinated synthetics, composites	97.0	2.0	None	None	70
Pearl Millets Hybrid	97.0	2.0	0.1	None	75
Pearl Millets open pollinated composites & Synthetics	97.0	2.0	0.1	0.05	70
Other millets like (Swank, Cheena, Kangni),	96.0	3.0	0.2	0.1	60
Oil Seeds :					
Castor Hybrid	97.0	3.0	None	None	70
Castor	97.0	3.0	None	None	70
Ground nut	96.0	3.0	None	None	70
Rape & Mustard	97.0	2.0	0.2	0.01	70
Linseed	97.0	3.0	0.2	0.01	70
Niger	97.0	3.0	0.2	0.01	70
Rocket Salad (Taramira)	97.0	3.0	0.2	0.01	70
Safflower	97.0	2.0	0.2	0.01	70
Sesame	96.0	3.0	0.2	0.01	70
Soyabean	96.0	3.0	0.2	0.05	70

1	2	3	4	5	6
Sunflower Hybrid	97.0	2.0	0.1	None	70
Sunflower open pollinated	97.0	2.0	0.2	None	70
Pulses					
Cow peas	97.0	2.0	0.2	0.01	70
Gram	96.0	2.0	0.2	0.05	70
Mash	97.0	2.0	0.2	0.01	70
Masoor	97.0	2.0	0.2	0.01	70
Moth	97.0	2.0	0.2	0.01	70
Mung	97.0	2.0	0.2	0.01	70
Vegetable Crops					
Cole Crops. Cabbage.	97.0	2.0	0.2	0.01	65
Cauliflower (heading Broccoli) & Broccoli (sprouting broccoli)	97.0	2.0	0.2	0.01	65
Chinese cabbage (heading & non-heading)	97.0	2.0	0.2	0.01	65
Knol kohl	97.0	2.0	0.2	0.01	65
Cucurbits					
Ashgourd	97.0	2.0	None	None	70
Bitter gourd	97.0	2.0	None	None	70
Bittergourd hybrid	97.0	2.0	None	None	70
Bottle gourd	97.0	2.0	None	None	70
Bottlegourd hybrid	97.0	2.0	None	None	70
Cucumber	97.0	2.0	None	None	70
Cucumber Hybrid	97.0	2.0	None	None	70
Indian squash	97.0	2.0	None	None	70
Long melon	97.0	2.0	None	None	70
Musk melon	97.0	2.0	None	None	70
Musk melon hybrid	97.0	2.0	None	None	70
Pumpkin	97.0	2.0	None	None	70
Pumpkin hybrid	97.0	2.0	None	None	70
Ridgegourd	97.0	2.0	None	None	70
Ridgegourd hybrid	97.0	2.0	None	None	70
Spongegourd	97.0	2.0	None	None	70

1	2	3	4	5	6
Spongegourd hybrid	97.0	2.0	None	None	70
Summer squash	97.0	2.0	None	None	70
Summer squash hybrid	97.0	2.0	None	None	70
Water melon	97.0	2.0	None	None	70
Water melon hybrid	97.0	2.0	None	None	70
Winter squash	97.0	2.0	None	None	70
Winter squash hybrid	97.0	2.0	None	None	70
Fruit Vegetables :					
Brinjal	97.0	2.0	None	None	60
Brinjal hybrid	98.0	2.0	None	None	65
Capsicum	97.0	2.0	0.2	0.01	60
Okra	97.0	2.0	0.1	0.01	65
Tomato	97.0	2.0	None	None	60
Tomato hybrid	98.0	2.0	None	None	60
Green Leafy Vegetables :					
Celery	96.0	3.0	0.2	0.01	60
Coriander	96.0	3.0	0.2	0.02	60
Fenugreek	96.0	3.0	0.2	0.01	60
Lettuce	97.0	2.0	0.2	0.01	65
Parsley	97.0	2.0	0.2	0.01	60
Spinach	94.0	5.0	0.2	0.01	60
Root Crops :					
Carrot	94.0	5.0	0.2	0.01	65
Carrot hybrid	97.0	2.0	None	None	65
Cardenbeet and Sugarbeet	95.0	4.0	0.2	0.01	65
Radish	97.0	2.0	0.2	0.01	70
Radish hybrid	98.0	2.0	None	None	70
Turnip	97.0	2.0	0.2	0.01	70
Turnip hybrid	97.0	2.0	None	None	70
Legumenous Vegetables :					
Peas	97.0	2.0	0.1	0.01	65
French bean	97.0	2.0	0.2	0.01	70
Bulbs & Tubers :					
Onion	97.0	2.0	0.2	0.01	60

Garlic

The average diameter of each bulb shall not be less than 25 mm or 25 g in weight.

The seed material should be reasonably cleaned. Cut, bruised, cracked immature or those damaged by insects, slugs or worms shall not exceed more than 2.0 per cent by weight.

Potato

1. The size of the seed potato shall be 30|60 mm.

2. The tuber shall be reasonably cleaned, healthy and firm with colour and shape distinct for variety. 3 per cent admixture of other varieties shall be permissible.

3. Mechanical damage *i.e.* cuts, injuries, bruises, cracks, shall be permissible only upto 5 per cent level.

The following percentage shall be permitted for visible symptoms caused by :—

	Maximum permitted %age
1. Rhizoctonia	2%
2. Wart	None
3. Brown rot	None
4. Powdery scab	0.5 %
5. Common scab	2 %
6. Black leg	1 %
7. Wet rot	1 %
8. Late blight	2 %
9. Fusarium & Verticillium spp.	2 %

SCHEDULE-III

[See Rule (4)]

Method for drawing of samples

- (a) Seed lot shall be well mixed and homogeneous.
- (b) When in sacks or in other similar sized containers, the procedure shall be as follows:—

No. of containers	Number to be sampled
1 to 5	Each container, portions being taken from at least five positions.
6 to 14	Not less than 5 containers.
15 to 30	At least 1 container in 3.
31 to 49	Not less than 10 containers.
50 to above	At least 1 container in 5.

When there are more than 5 containers in the lot, the containers to be sampled shall be taken *at random*.

- (c) For sampling seed lost in containers weighing less than 50 Kg, a 100 Kg. weight of seed is taken as the basic units. Containers are combined to form sampling units weighing a maximum of 100 Kg. (*i.e.* 5 containers each of 20 Kg. form one unit).

- (d) Samples shall be taken in the following manner:—

- (i) Where the seeds are in sacks they shall be sampled *at random* and samples taken from the top, middle and bottom of each selected sack. The position from which the seeds are taken shall be varied from sack to sack and seeds shall be taken from different horizontal positions. Wherever practicable, seeds shall be sampled with a metal spear, trier or probe with a solid point which shall be of sufficient length to reach beyond the middle of the sack when inserted from the side and shall have an oval aperture so placed that the instrument removes portions of seeds of equal volume from each part of the sack through which it travels. The instrument should be inserted into the sack in an upward direction at an angle of approximately 30 degree to the horizontal with its aperture downward until the aperture reaches the centre of the sack. It shall then be rotated so as to bring the aperture to face upward and withdrawn with a decreasing speed so that the quantity of seed obtained from the successive locations increases progressively from the centre to the side of the sack. Alternatively, a longer instrument should be inserted until the aperture reaches the farther side of the sack, rotated in the manner described above and withdrawn at a uniform speed.

A stick sampler may be used in place of the instrument above. It may be used horizontally or vertically. If the stick sampler has more than one aperture it must have transverse partitions so that such aperture opens into a separate compartment. It should be inserted diagonally into the sack in the closed position, then opened gently agitated to allow it to fill completely, closed again, withdrawn and emptied.

Seeds in containers other than sacks, wherever, practicable shall be sampled with an instrument as aforesaid which shall be used as already prescribed.

When it is not practicable to sample seeds in sack or other containers in the manner already prescribed portions may be taken by hand, care being taken to keep the fingers tightly closed about the seeds so that none may escape as the hand is withdrawn. If necessary, in order to reach the lower levels, part of the contents shall be emptied into another sack or other container.

(ii) *Seeds in a partly filled container :*

The seeds shall be thoroughly mixed by hand and small portions then taken from at least five different positions.

(iii) *Seeds in Bulk :*

Portions of seeds shall be taken with a stick sampler from at least the number of positions indicated as below :—

Size of lot	Number of positions to be sampled
Upto 50 Kg	.. Not less than 3.
51 to 1500 Kg.	.. Not less than 5.
1501 to 3000 Kg.	.. At least 1 for each 300 Kg.
3001 to 5000 Kg.	.. Not less than 10.
5001 to 20,000 Kg.	.. At least 1 for each 500 Kg

Sampling positions must be selected *at random*, both vertical and horizontal positions.

If the stick sampler has more than one aperture it shall have transverse partitions so that each aperture opens into a separate compartment.

(iv) *Seeds in cleaning, mixing or dressing machines :*

Portions of seed shall be drawn during the cleaning, mixing or dressing process, so that the entire cross section of the seed stream

is uniformly sampled at regular intervals throughout the whole process. The frequency shall be as indicated in the table below :--

Size of Lot	Number of times to be sampled
Upto 50 Kg.	Not less than 3.
51 to 1500 Kg.	Not less than 5.
1501 to 3000 Kg.	At least 1 for each 300.
3001 to 5000 Kg.	Not less than 10.
5001 to 20,000 Kg.	At least 1 for each 500 Kg.

- (v) When the individual portions, taken from the lot already exceed the amount required, they shall be put together in a clean receptacle and well mixed. The composite sample so obtained shall be reduced by halving method using hands.
- (vi) Portions of seed for moisture test shall be drawn in such a way as to prevent exposure to the atmosphere. Samples shall be packed in air-tight container. Seeds for moisture test shall be kept separate from seeds on which other determinations are to be made.
- (vii) Sample drawn shall be tested in the Seed Testing Laboratories and results conveyed to the Federal Seed Certification Department for action.