

02 June 2005

**ADMINISTRATIVE ORDER No. 20**

Series of 2005

Subject: **REVISED SEED AND FIELD STANDARDS FOR THE PRODUCTION OF HYBRID (F<sub>1</sub>) SEEDS AND HYBRID RICE PARENTAL SEEDS (A or CMS Line B or Maintainer Line, and R or Restorer Line)**

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Pursuant to the provisions of the Implementing Rules and Regulations of R.A. 7308, otherwise known as the Seed Industry Development Act of 1992, Article II Section 3C, and upon approval of the National Seed Industry Council the following standards and procedures are to be adopted to ensure the quality of hybrid (F<sub>1</sub>) and parental seeds (A or CMS line, B or Maintainer line and R or Restorer line):

1. The general requirements of seed certification applicable to all crops like hybrid rice (F<sub>1</sub>) and hybrid rice parental seeds (A/B/R line) as adopted by the National Seed Quality Control Services are basic together with the succeeding specific requirements.
2. The production area must have fertile soil adapted for parental lines, with sufficient irrigation and efficient drainage system, not shaded and has no previous record of serious incidence of pests and diseases.
3. The production area must undergo at least four series of inspections to be conducted by duly trained official seed inspectors during the seed production process at the following stages:
  - a. transplanting – to ensure that proper row orientation, appropriate distance of planting and number of seedlings per hill are followed;
  - b. maximum tillering before heading – to check whether off-types and other varieties are properly removed;
  - c. flowering stage – to ensure that all possible sources of contamination are rogued; off-types should be actually computed to have strong basis for rejection (if after the inspection and the off-types are not removed, the field should be rejected);
  - d. harvest time – to ensure that the R lines (male parent) are harvested ahead and taken out of the field before harvesting A line (seed parent);
4. Report of inspection should be submitted one week after each inspection to the National Seed Quality Control Services, who has jurisdiction over the area.
5. During processing and storage, proper cleaning and bagging must be observed to maintain general cleanliness/sanitation and prevent mechanical mixtures of varieties.
6. Seed samples shall be taken at random prior to closing of bags. Intensify of sampling is as follows:
  - a. 1-10 bags/lot – sample all bags
  - b. Parental – 50 bags/lot at 15 kgs/bag (sample at least 10 bags in a lot)
  - c. F<sub>1</sub> production – 100 bags/lot at 20 kgs/bag (samples at least 20 bags in a lot)

7. The following field requirements and standards must be met;
- a. Production area – at least five hectares of compact land;
  - b. Isolation – strictly isolated to ensure genetic purity of hybrid seeds and rice parental and avoid pollination from unwanted varieties. The following isolation methods shall be followed:
    - i. Distance isolation – an isolation of 100 meters is satisfactory. Within this range, no other rice varieties should be grown except for the pollen parent;
    - ii. Time isolation – adjust planting time to separate flowering of seed parent from other cultivars within 100 m by at least 3 weeks. The heading stage of varieties grown within 100 m around the hybrid seed production field should be over 21 days earlier or later than that of the cytoplasmic male sterile (CMS) lines or A line; and
    - iii. Barrier isolation – topographic surface features or any physical obstacles be natural or artificial, with height of at least 2.5 m or crop barrier having a height of at least 2.2 m and 3 to 4 m wide can be used as a means of isolation barrier.
  - c. Roguing – sources of undesirable rice plants like volunteer plants, off-types should be removed from A line or R line at any time of the plant stage development and more importantly during the maximum tillering, flowering and before harvest stages; and
  - d. Control of weeds, diseases and insect pests – keep weeds, disease and insect pests under control.
  - e. Field inspection guidelines and standards – recommended planting practices, isolation, varietal field purity must be met for the seed harvest to be eligible for certification; the seed inspector shall certify eligibility based on the guidelines and standards for field inspection of F1 and parental seeds production as shown in ATTACHEMENT 1.

8. Must meet the following seed standards:

Seeds harvested from field and inspected seed crop must undergo seed testing/analysis and meet the seed standards as seen in ATTACHMENT II, Seed Standards for F1 and Parental Seeds of Hybrid rice.

9. Tagging of seed stock that meet the standards of seed certification shall be done and/or closely supervised by the Seed inspectors.

Color of tags of hybrid seeds are as follows:

White	-	Breeder (A, B, R)
Red	-	Foundation (A, B, R, A x R)
Green	-	Registered (A line)
Pink	-	Registered (B/R line)
Orange	-	Certified (F <sub>1</sub> )

10. In the case of public hybrids, field inspection and laboratory analysis of parental lines shall be limited to the AxB (Foundation and Registered Seed) and AxR production.

11. In the case of propriety hybrids, the quality declared scheme of seed quality control will be followed for the AxB (Foundation and Registered Seed) production. For the AxR production however, same procedure as in public hybrids (Item no. 10) shall be followed.

Non-compliance with the above requirements shall be a ground for the denial of seed certification.

This Order shall take effect immediately and supersedes Memorandum Order No. 27, Series of 2001.

**ARTHUR C. YAP**

Secretary, Department of Agriculture  
and Chairman, National Seed Industry Council

Recommending Approval:

**CLARITO M. BARRON, CESO IV**

Executive Director & Vice Chairman,  
National Seed Industry Council

2 June 2005

**ATTACHMENT I. Guidelines & Field Standards for F<sub>1</sub> and Parental Seed Production**

Inspection Time	Factor	Standard				Requirements
		Breeder	Found	Reg	Cert.	
1. Immediately after transplanting (1-10 DAT)  Within 15 days after transplanting (DAT) A line	1. No of seedlings /hill					- Straight planting - Replanting of missing hills (within 5 DAT)  - Construction of physical barriers in case of isolation problems  - Construction of physical barriers in case of isolation problems. - Roguing of volunteer plants.
	A x B (A line / B line)	1 / parent	1 / parent	1 / parent	-	
	R line multiplication	1	1	1		
	A x R					
	A line	-	-	-	1-2	
	R line	-	-	-	2-3	
	2. Distance (m) from possible contamination					
	A x B	100	100	100	-	
	R line	10	5	5	-	
	A x R line	-	-	-	100	
3. Flowering difference from pollen contaminators (days)						
A x B	25	20	20	-		
R line multiplication	20	20	20	-		
A x R line	-	-	-	20		
2. Maximum tillering	1. No of off-types (max %)					- Roguing of volunteer plants immediately during vegetative stage - Possible sources of contamination evaluated
	A x B	.08/parent	.16/parent	0.4/parent		
	R line	.04	.08	0.2		
	A x R Seed Production	-	-	-	0.4/ parent	
3. Flowering stage	A x B					- Verification of possible contamination; most critical stage to rogue
	A line varietal purity (%)	100	100	99	-	
	B line varietal purity (%)	100	100	-	-	
	R line varietal purity (%)	100	100	99	100	
4. Before harvest	No of off-types (max %)					- Early removal/ harvesting of males to provide sufficient time for final roguing of female parents before harvesting
	A x B	0.02/parent	0.05/parent	0.1/parent		
	R line	0.02	0.05	0.1		
	A x R Seed Production				0.15/parent	

ATTACHMENT II. Seed Standards for F<sub>1</sub> and Parentals

Factors	Breeder		Foundation		Registered		Certified (F <sub>1</sub> )
	A	B/R	A	B/R	A	B/R	
Pure Seed (min) %	99	99	99	99	98	98	98
Weed & other cup seed (max) %	0	0	0	0	0.5	0.5	0.5
Inert matter (max)%	1	1	1	1	1.5	1.5	1.5
Red rice no of grains/500 grms (max)	0	0	1	1	2	2	3
Other varieties no./500 grms (max)	1	1	3	3	5	5	250
Germination (min)%	85	85	85	85	85	85	85
Moisture content (max)	14	14	14	14	14	14	14