U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Rice (*Oryza sativa*)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME

ADDRESS *(Street and No. or RD No., City, State, and Zip Code, Country)*	FOR OFFICIAL USE ONLY
	PVPO NUMBER

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the character of this variety in the spaces provided below. These numbers are also code numbers corresponding to descriptors developed by IBGR-IRRI Rice Advisory Committee and the US Rice Crop Advisory Committee. Breeders will demonstrate distinctness more readily by describing as many characters as is possible.

1. MATURITY: Days to Heading (Seedling to 50% Heading)

A. South: (Location: _____) at _____kg/ha (Nitrogen Rate)

____ Number of Days

____ Days Earlier Than Check Variety: _____

____ Days Same As Check Variety: _____

____ Days Later Than Check Variety: _____

____ Maturity Class 1 = Very Early (85 Days or Less) 2 = Early (86 – 100)
3 = Intermediate (101 - 115) 4 = Late (More Than 115)

B. California: (Location: _____) at _____kg/ha (Nitrogen Rate)

____ Number of Days

____ Days Earlier Than Check Variety: _____

____ Days Same As Check Variety: _____

____ Days Later Than Check Variety: _____

____ Maturity Class 1 = Very Early (90 Days or Less) 2 = Early (91 – 97)
3 = Intermediate (98 - 104) 4 = Late (More Than 104)

2. CULM:

____ Angle (Degrees from Perpendicular after Flowering):
1 = Erect (Less than 30°) 3 = Intermediate (About 45°) 5 = Open (About 60°)
7 = Spreading (More than 60° but the culms do not rest on the ground)
9 = Procumbent (The culm or its lower part rests on the ground surface)

2. CULM: (continued)

LENGTH

__ __ __ • __ cm (Soil level to top of extended panicle on main stem)

__ __ • __ cm Shorter Than Check Variety: _____

Length Same as Check Variety: _____

__ __ • __cm Longer than Check Variety: _____

____ Height Class: 1 = Short (≤ 95 cm) 2 = Medium (96-114 cm) 3 = Tall (≥115 cm)

____ Internode Color: (After Flowering): 1 = Green 2 = Light Gold 3 = Purple Lines 4 = Purple

____ Strength (Lodging Resistance): 1 = Strong (no Lodging) 3 = Moderately Strong (Most Plants Leaning) 5 = Intermediate (Most Plants Lodged) 7 = Weak (Most Plants Flat) 9 = Very Weak (All Plants Flat)

3. FLAG LEAF: (At Maturity)

__ __ • __ cm Length __ __ • __ mm Width

____ Pubescence: 1 = Glabrous 2 = Intermediate 3 -= Pubescent

____ Leaf Angle (After Heading): 1 = Erect 3 = Intermediate 5 = Horizontal 7 = Descending

____ Blade Color (At Heading): 1 = Pale Green 2 = Green 3 = Dark Green 4 = Purple Tips 5 = Purple Margins 6 = Purple Blotch 7 = Purple

____ Basal Leaf Sheath Color(At Heading): 1 = Green 2 = Purple Lines 3 = Light Purple 4 = Purple

4. LIGULE:

__ __ • __ mm Length (From base of collar to the tip, at late vegetative stage)

____ Color: (Late Vegetative Stage): 1 = White 2 = Purple Lines 3 = Purple

____ Shape: 1 = Acute to Acuminate 2 = 2-Cleft 3 = Truncate

____ Collar Color (Late Vegetative Stage): 1 = Pale Green 2 = Green 3 = Purple

____ Auricle Color (Late Vegetative Stage): 1 = Pale Green 2 = Purple

5. PANICLE:

__ __ • __ cm Length

____ Type: 1 = Compact 5 = Intermediate 9 = Open

____ Secondary Branching: 1 = Absent 2 = Light 3 = Heavy 4 = Clustering

____ Exsertion (Near Maturity): 1 = Less than 90% 2 = 90 – 99% 3 = 100% Exserted

____ Shattering (At Maturity): 1 = Low (≤ 5%) 5 = Moderate (6 – 25%) 9 = High (More than 25%)

____ Threshability: 1 = Difficult 2 = Intermediate 3 = Easy

6. GRAIN: (Spikelet)

____ Awns (After Full Heading): 0 = Absent 1 = Short and Partly Awned 5 = Short and Fully Awned 7 = Long and Partly Awned 9 = Long and Fully Awned

____ Apiculus Color (At Maturity): 1 = White 2 = Straw 3 = Brown (Tawny) 4 = Red 5 = Red Apex 6 = Purple 7 = Purple Apex

____ Apiculus Color (After Full Heading): 1 = White 2 = Straw 3 = Brown (Tawny) 4 = Red 5 = Red Apex 6 = Purple 7 = Purple Apex

____ Stigma Color: 1 = White 2 = Light Green 3 = Yellow 4 = Light Purple 5 = Purple

6. GRAIN: (Spikelet)

____ Lemma and Palea Color (At Maturity):

0 = Straw
1 = Gold and/or Gold Furrows on Straw Background
2 = Brown Spots on Straw (Piebald)
3 = Brown Furrows on Straw
4 = Brown (Tawny)
5 = Reddish to Light Purple
6 = Purple Spots on Straw
7 = Purple Furrows on Straw
8 = Purple
9 = Black
10 = White

____ Lemma and Palea Pubescence: 1 = Glabrous 2 = Hairs on Lemma Keel 3 = Hairs on Upper Portion
4 = Short Hairs 5 = Long Hairs (Velvety)

____ Spikelet Sterility (At Maturity): 1 = Highly Fertile (> 90%) 3 = Fertile (75 – 90%) 5 = Partly Sterile (50 – 74%)
7 = Highly Sterile (< 50% to Trace) 9 = Completely Sterile (0%)

7. GRAIN: (Seed)

____ Seed Coat (Bran) Color: 1 = White 2 = Light Brown 3 = Speckled Brown 4 = Brown
5 = Red 6 = Variable Purple 7 = Purple

____ Endosperm Type: 1 = Nonglutinous (Nonwaxy) 2 = Glutinous (Waxy) 3 = Indeterminate

____ Endosperm Translucency: 1 = Clear 5 = Intermediate 9 = Opaque

____ Endosperm Chalkiness: 0 = None 1 = Small (Less than 10% of Sample)
5 = Medium (10 – 20% of Sample) 9 = Large (More than 20% of Sample)

____ Scent (Aroma): 0 = Nonscented 1 = Lightly Scented 2 = Scented

Shape Class (Length/Width Ratio):

____ Paddy 1 = Short (2.2:1 and Less) 2 = Medium (2.3:1 to 3.3:1) 3 = Long (3.4:1 and More)

____ Brown 1 = Short (2.0:1 and Less) 2 = Medium (2.1:1 to 3.0:1) 3 = Long (3.1:1 and More)

____ Milled 1 = Short (1.9:1 and Less) 2 = Medium (2.0:1 to 2.9:1) 3 = Long (3.0:1 and More)

Measurements:

Grain Form	Length (mm)	Width (mm)	Thickness (mm)	L/W Ratio	1000 Grains (grams)
Paddy	_____	_____	_____	_____	_____
Brown	_____	_____	_____	_____	_____
Milled	_____	_____	_____	_____	_____

____ Milling Quality (% Hulls) ____ Milling Yield (% White Kernel (head) Rice to Rough Rice)

____ % Protien ____ % Amylose

Alkali Spreading Value: _____ 1.5% KOH Solution or _____ 1.7% KOH Solution

____ Gelatination Temperature Type: 1 = High 5 = Intermediate 7 = Low

Amylographic Paste Viscosity

Peak	Hot Paste	Cooled Paste	"Breakdown" "Setback"
_____	_____	_____	_____

8. RESISTANCE TO LOW TEMPERTURE:

____ Germination and Seedling Vigor: 1 = Low 2 = Medium 3 = High

____ Flowering (Spikelet Fertility): 1 = Low 2 = Medium 3 = High

9. SEEDLING VIGOR NOT RELATED TO LOW TEMPERATURE:

____ Vigor: 1 = Low 2 = Medium 3 = High

10. BLAST RESISTANCE: (*Magnaporthe oryzae*). (International races found under References)

0 = Immune 1 = Resistant 3 = Moderately Resistant 5 = Intermediate 7 = Moderately Susceptible 9 = Susceptible

Group		IB		IC		ID		IE	IG	IH	Others:
Number	1	5	45	49	54	1	17	1	13	1	1	1
Resistance	___	___	___	___	___	___	___	___	___	___	___	___

11. RESISTANCE TO OTHER DISEASES:

0 = Immune 1 = Resistant 3 = Moderately Resistant 5 = Intermediate 7 = Moderately Susceptible 9 = Susceptible

____ Narrow Brown Leaf Spot (*Cerospora oryzae*)

____ Leaf Smut (*Entyloma oryzae*)

____ Brown Leaf Spot (*Helminthosporium oryzae*) (=*Bipolaris oryzae*) (=*Drechslera oryzae*)

____ Leaf Scald (*Gerlachia oryzae*)

____ Hoja Blanca Virus

____ Sheath Rot (*Sarocladium oryzae*)

____ Pythium Seedling Blight (*Pythium* sp.)

____ Sheath Spot (*Rhizoctonia oryzae*)

____ Other: _____

____ Aggregate Sheath Spot (*Rhizoctonia oryzae-sativae*)

____ Straight Head

____ Kernel Smut (*Neovossia horrida*) (=*Tilletia barclayana*)

____ White Tip Nematode (*Aphelenchoides besseyi*)

____ Stem Rot (*Sclerotium oryzae*)

____ Bacterial Blight (*Xanthomonas campestris pv. oryzae*)

____ Sheath Blight (*Rhizoctonia solani*)

12. INSECT RESISTANCE:

0 = Immune 1 = Resistant 3 = Moderately Resistant 5 = Intermediate 7 = Moderately Susceptible 9 = Susceptible

____ Grasshopper

____ Rice Leafhopper

____ Rice Hispa

____ Rice Midge

____ Least Skipper

____ Rice Stink Bug (*Oegalus pugnax*)

____ Swarm Caterpillar

____ Rice Water Weevil (*Lissorhoptrus oryzophilus*)

____ Rice Stalk Borer (*Chilo plejadellus*)

____ Sugarcane Borer (*Diatraea saccharalis*)

13. OTHER DESCRIPTORS: If there are other characters that describe this variety, please indicate below:

REFERENCES

C. R. Adair *et al*. 1972. Rice in the United States: Varieties and Production. USDA Handbook No. 289 (Rev.), 124 pp.

J. G. Atkins *et al*. 1967. An International Set of Rice Varieties for Differentiating Race of *Pyricularia Oryzae*. Phytopath. 57:297-301.

IBPGR-IRRI Rice Advisory Committee. 1980. Descriptors for Rice *Oryzae Sativa* L. International Rice Research Institute. 21 pp.

K. C. Ling and S. H. Ou, 1969. Standardization of the International Race Numbers of *Pyricularia Oryzae*. Phytopath. 59:339-342.

B. D. Webb *et al*. 1985. Utilization Characteristics and Qualities of United States Rice. In Proceedings on Rice Grain Quality and Marketing. International Rice Research Institute (IRRI), Los Branos, Philippines. P. 25-35.