4. Weed Management

- Weeds are controlled most effectively by the use of an integrated programme combining different control methods**.**
- Good weed management practice includes: cleaning of machinery and implements; good land preparation; choice of variety (traits: excellent early vigor, good tillering ability, early canopy); appropriate seed rate; field sanitation; fertilizer application.
- Water management is crucial for managing weeds in rice. Maintain 3-4 inches of water throughout the crop.
- Chemical control: weed control must be undertaken early. Herbicide application around 14-18 DAS is best recommended so that it can facilitate fertilizer application and subsequent irrigation. Some herbicide recommended are Nominee, Nomeny, Rice Weed Killer, Designee. Drain fields for effective herbicide application, then flood after 24 -48 hours.

5. Nutrient Management

- Fertilizer recommendation must be based on a chemical soil analysis.
- The following Fertilizer Combination were found very effective:

  Ø Triple Super Phosphate (TSP): 50-75 lbs/acre(56-84 kg/ ha)

  Ø Murate of Potash (MOP): 50-75 lbs/acre (56-84 kg/ha)

  NB: TSP and MOP can be incorporated dry at land prep or broadcast at 14-21 DAS

  Ø Urea: 1.5– 2 bags/ac 185-247 kg/ha. It can be split in three application timings: 14-21, 40-42 and 60 DAS in proportions of 25, 50 and 25 % respectively

  The third dose fertilizer will depend on the crop health (greenness, height etc)
- Urea must be applied in field with reduce or low water content
- Application of fertilizer must be done after weeds are managed.

6. Pest and Disease Management:

Insect Pest

- An Integrated Pest Management (IPM) approach is recommended to effectively manage insect pest populations.
- IPM includes: good land preparation, block planting, field sanitation, water management, rouging, regular monitoring, judicious use of chemicals.
- Some effective chemicals against early season pest and Paddy Bug *(Oebalus poecilus)* : Contact (Fastac, Ninja, Flip); Systematic (Pronto, Admire, Admister)

7. Diseases:

Both varieties are resistant to rice blast disease (*Pyricularia grisea*) and tolerant to Brown Spots (*Bipolaris oryzae, Cochilobolus miyabeans).*

It is important to have an Integrated Disease Management (IDM) approach to manage rice disease, particularly Brown Spots. Some useful tips: sow within the season; use recommended seed rates, avoid excess nitrogen fertilizer, use Potash (K) fertilizer, control alternative host, avoid water stress, good sanitation practices.

Recommended chemicals: Fugi-one. Stratego, Carbendazim, Manzate, Super Blast, have also shown promising results.

8. Harvesting

Drain fields between 90-95 days after sowing.
Harvest at 18 - 20 % moisture for best milling recoveries, germination and vigour.
Reduce grain moisture to less than 16% within 24 hours.
Where controlled drying is not possible harvest at moisture content less than 16%.

Breeder's Remarks:

These two rice genotypes possess excellent early vigour, very good tillering ability and also canopies very early. They also have the ability to emerge well from 4-6 inches of standing water in field. These traits are particularly important for good crop establishment and weed competitiveness.

The strong and thick culm (stem) coupled with slow leaf senescence contribute positively to its ability to tolerate lodging and grain filling. They are better able to tolerate lodging as compared to the GRDB 10.

The long panicles with highly fertile grains (200-300 grains per panicle), yields approximately 40-45 bags/acre. They respond very well to improved management practice and has the
genetic potential to produce even higher yields. These varieties have comparative yield advantage (10-20%) over GRDB 09 and the G98 varieties, similar to that of GRDB 10.

They have also demonstrated excellent milling and cooking qualities which makes them desirable for the local and international market.

GUYANA RICE DEVELOPMENT BOARD
116-117 Cowan Street, Kingston, Georgetown.
Tel: 592-225-8717 Fax: 592-225-6486
Email: info@grdb.gy Website: www.grdb.gy

GUYANA RICE DEVELOPMENT BOARD

BURMA RICE RESEARCH STATION

Subject to Periodic Revision

TWO NEW VARIETIES OF RICE FOR COMMERCIAL CULTIVATION IN GUYANA

Managing New Lines

1. Some Characters of the two (2) New Lines

Characters	GRDB 11 (FG06-98)	GRDB 12 (FG07-35)
Seedling Vegetative Vigour (Vg)	Extra Vigorous	Extra Vigorous
Tillering Ability (Ti)	Very High	Very High
Culm Strength (Cs)	Strong	Strong
Lodging Incidence (Lg) (%)	0-5	0-5
Plant Height (Ht)	Intermediate (110.66)	Intermediate (111.45)
Leaf Senescence (Sen)	Late and Slow	Late and Slow
Panicle Exsertion (Exs)	Well Exserted	Well Exserted
Panicle Treshability (PT)	Easy	Easy
Spikelet Fertility (SpFert)	Highly Fertile	Highly Fertile
Phenotypic Acceptability (PAcp)	Excellent	Excellent
Awning (An)	Short & Partly awned	Short & Partly awned
Stigma color (SgC)	White	White
Lemma and Palea color (MPC) [Grain Color]	Straw	Straw
Days to complete Flowering	85-90	80-85
Dormancy (Days)	24	24
Maturity (Mat)	114-118	112-116
Effective Tiller	420	415
Grain Yield (bag/ac)	40-45 (6.3-7 t/ha)	40-45(6.3-7 t/ha)
Blast (*Pyricularia grisea*)	Resistant	Resistant
Brownspot (*Cochliobolus miyabeanus* (*Bipolaris oryzae, Drechslera oryzae*).	Tolerant	Tolerant
Sheath Blight (*Thanethoporus cucumeris* (*Rhizoctonia solani*)	Tolerant	Tolerant
Sheath Rot (*Soracladium oryzae*)	Tolerant	Tolerant
Grain Length (GrL) (mm)	10.081	10.062
Grain Width (GrW) (mm)	2.502	2.502
Grain Shape (GrS)	Slender	Slender
Brown Rice Length (BrLn) (mm)	7.242	7.226
Brown Rice Width (BrW (mm)	2.233	2.233
Brown Rice Shape (BrS)	Slender	Slender
1000 Grain Weight(GW) (g)	27.885	29.132
Chalkiness (Clk) (%)	0.02	0.03
Total Rice Recovery (TRR)- Paddy (%)	61.5	64.2
Head Rice Recovery (HRR)- Paddy (%)	52.4	53.6
Total Rice Recovery (TRR)- Brown (%)	81.7	84.7
Head Rice Recovery (HRR)- Brown (%)	68.2	70.7
Bran content % (cargo)	11.29	11.6
Hull Content (%)	19.9	20.05
Grain Expansion- Length (GEL) (%)	47.25	54.44
Grain Expansion- Width (GEW) (%)	56.04	42.45

2. Crop Establishment

i. Seed and Seed Rate

- Certified seeds where possible.
- On fairly level and uniform fields sow only 100-120 lbs/ac (112.2-134.7 kg/ha) clean seeds.
- Under less favorable conditions (uneven land, unclean seeds, etc.), the seed rate can be increased up to 140 lbs/ac (157.2kg/ha).
- Do not use muddy or stagnant water when soaking seed.
- Soak seeds for 24 to 30 hrs. At the end of the soaking period remove/drain off excess water.
- Incubate (*press*) seeds for 36-48 hrs, when broadcasting by hand. 24 hrs will be sufficient if broadcasting is to be done by aircraft.
- Light wetting (watering) may be necessary during incubation.

ii. Synchrony of Sowing

It is critical to sow within the sowing season. Sowing must be completed within Nov-Dec (for the first crop) and 15th May-15th July) for second crop.

All attempts must be made for farmers in an area to sow together (block planting).

iii. Seed Treatment

Seeds can be treated with products such as Crusier, Regent, Fripronil, Flip, which will reduce the infestation of water weevil and leaf miner.

3. Water Management

- Retain water used for puddling operation to grow rice crop. Allow 2 to 3 days for suspended sediments to settle before the germinated seeds are sown.
- Drain fields 2-3 days after sowing. Fields can then be flooded 6 to 7 days after draining.
- Grow the crop through flooded conditions of 3 to 4" (7.5 to 10 cm) if your field has a history of weed (red rice and grasses) problems.
- Ideally water should be completely drained for the application of fertilizers or post emergence herbicide
- Maintain adequate water level (3 to 4" or 7.5 to 10 cm) until around 90-95 days after seeding. Then drain the field completely.