(vi) CUMBU NAPIER HYBRIDS

A. CROP IMPROVEMENT

I. SEASON AND VARIETIES

Zone District/Season	Month	Varieties
Irrigated		
All Districts	Throughout the year	KKM 1, CO 3, CO (CN) 4, CO (CN)5

II. PARTICULARS OF CUMBU NAPIER GRASS VARIETIES

PARTICULARS	KKM 1	CO 3	CO (CN)4	CO (BN) 5
Year of Release	2000	-	2008	2012
Year of Notification	So.161(E)/04 .02.2004			SO.1146(E)/24.04.2 014
Parentage	IP 15507 x FD 429	PT 1697 x *Penneisetum purpureum*	CO 8 x FD 461	IP 20594 x Napier grass FD 437
Duration (Days)	Perennial	**Perennial**	**Perennial**	**Perennial**
Green fodder yield (t/ha/yr)	288	350 (7 harvests)	375-400 (7 harvests)	360 (7 harvests)
Morphological characters				
Plant height (cm)	155-160	300 – 360	400-500	400-500 cm
No. of leaves per clump	165-170	400-450	400-450	400-430
No. of tillers per clump	10-15	30 – 40	30 – 40	30-40
Leaf stem ratio	-	0.70	0.71	1.19
Leaf length (cm)	110-115	80 – 95	110-115	100-110 cm
Leaf width (cm)	4.5-5.0	3.0 – 4.2	4.0-5.0	4.0-5.0 cm
Quality characters				
Dry matter yield (t/ha/yr)	47.23	65.12	79.87	79.20
Crude protein yield (t/ha)	4.65	5.40	8.71	11.08
Dry matter (%)	16.4	17.0	21.3	22.0
Crude protein (%)	9.85	10.5	10.71	14.0

B. CROP MANAGEMENT

1. Soil

All types of soil with good drainage.

2. Preparatory cultivation

Plough with an iron plough two to three times to obtain good tilth. Form ridges and furrows of 6 m long and 60 cm apart.

3. Nutrient Management

- Spread FYM or compost at 25 t/ha along with 10 packets of Azospirillum (2000 g) and 10 packets of Phosphobacteria (2000g) inoculum or 20packets of Azophos (4000g) and incorporate the manure into the soil during ploughing.
- Apply NPK fertilizers as per soil test recommendation as far as possible. If soil testing is not done, follow the blanket recommendations of 150:50:40 of NPK in kg/ha. Apply full dose of P, K and 50% N basally before planting.
- Top dressing of 50% N on 30 DAS.
- Repeat the application of 75 kg N after each cut for sustaining higher yield.
- Application of *Azospirillum* (2000g) and *Phosphobacterium* (2000g) or *Azophos* (4000g) along with 75% of recommended dose of N and P fertilizers enhanced the yield besides saving of 25% of fertilizer dose.

4. Planting

i. Irrigate through the furrows and plant one rooted slip/two budded stem cutting per hill.

ii. Spacing 60 x 50 cm and 33,333 planting material are required to plant one hectare.

5. Irrigation management

Immediately after planting, give life irrigation on the third day and thereafter once in 10 days. Sewage or waste water can also be used for irrigation.

Paried row drip system (60/90 cm x 50 cm) + drip irrigation at 125% PE + nitrogen fertigation at 100% RDN was found to be suitable for obtaining similar green fodder yield as that of surface irrigation with 12.6% water saving in Bajra Napier hybrid grass.

6. Weed management

Hand weeding can be done whenever necessary.

7. Plant protection

As per CIB&RC, insecticide is not recommended for the management of pests in fodder crops. No insecticide is registered/label claimed against the pests of fodder crops.

8. Harvesting

First harvest is to be done on 75 to 80 days after planting and subsequent harvests can be done at intervals of 45 days.

9. Green fodder yield

As green fodder under irrigated conditions, a pure crop yields about 360 to 400 t/ha of green fodder.

Note

- Quartering has to be done every year or whenever the clumps become unwidely and large.
- Wherever necessary to alleviate the ill effects of oxalates in this grass, the following steps are suggested.
    i. Feeding 5 kg of leguminous fodder per day per animal along with these grasses or
    ii. Providing calcium, bone meal or mineral mixture to the animal or
    iii. Giving daily half litre of supernatant clear lime water along with the drinking water or sprinkling this water on the fodder
    iv. Cultivation of 14 cents of green fodder (Cumbu Napier hybrid grass: 9 cents and *Desmanthus:* 5 cents) are needed for a milch animal with a milk yield of 10 lit/day/animal.
    v. Cultivation of 2.5 cents of green fodder (Cumbu Napier hybrid grass: 1.5 cents and *Desmanthus:* 1.0 cent) are needed for a goat with average body weight of 40 kg.