

Nitrogen



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The efficiency of nitrogenous (N) fertilizer use can be improved by monitoring leaf color at 7 to 10 day intervals with the leaf color chart (LCC) and applying N fertilizer as needed by the crop (see LCC fact sheet). An alternative approach to N fertilizer timing and management is presented here for cases when it is not feasible for farmers to visit their fields on 7 to 10 day intervals.

What is the N splitting pattern approach?

The splitting pattern approach provides a recommendation for the total N fertilizer requirement (kg/ha) and a plan for the splitting and timing of applications in accordance with crop growth stage, cropping season, variety used, and crop establishment method.



Leaf colour chart (LCC)

Recommendation of N fertilizer for Assam

In Assam, *Sali*, *Boro* and *Ahu* are the major rice growing seasons. Nitrogen recommendations are based on the varietal distribution in that particular season. The semi dwarf and tall varieties have different N recommendations during the *Sali* season. In *Boro* season the hybrids and semi dwarf high yielding varieties (HYVs) have different N recommendations. Normally the split doses of N are recommended in the transplanted and the direct seeded methods. The following chart gives value for basal or top dressed N for varieties of rice segmented groups. The *Ahu* season have less N recommendations for semi dwarf HYVs in comparison to *Boro* season.



Fertilizer broadcasting

Nitrogen split application (Kg/ha)					
Growth stage	Sali season		Boro season		Ahu season
	Semi dwarf HYVs/ STRVs	Tall varieties	Semi dwarf HYVs	Hybrids	Semi dwarf HYVs
Basal dose	20	20	20	40 Kg	13
Tillering stage	20	-	20	30 Kg	14
Panicle initiation	20	-	20	30 Kg	13
After flood water recedes	20*	-	-	-	-
Total:	60-80* Kg	20 Kg	60 Kg	100 Kg	40 Kg

Semi dwarf high yielding and stress tolerant rice varieties grown in any of the three seasons *Sali*, *Boro* or *Ahu* have similar N recommendations sown either direct seeded or transplanted depending on topography and availability of water. Additional 20 Kg N/ha recommendation is made for STRVs after receding of flood water in *Sali* season. If DAP is used as P source under DSR, N content in DAP would be enough to support initial growth. The balance N of the basal dose can be applied as urea immediately after applying post-emergence herbicide or first weeding within about 20-25 days of sowing.

How to use the LCC in the splitting pattern approach?

Use the critical LCC values given in the Fact Sheet LCC to adjust the amount of split N rates based on crop demand and plant N status. For example, if 20 ± 10 kg N per ha is recommended for a certain growth stage,

- Apply 30 kg N/ha, if the leaf color is below the critical value.
- Apply the standard rate of 20 kg N/ha if the leaf color is equal to the critical value
- Postpone the fertilizer application and apply a lower rate of 10 kg N/ha if the leaf color is above the critical LCC value.

How to develop a splitting pattern ?

Use the Nitrogen split application table to look up splitting patterns for fertilizer N for the recommendation domain. Further adaptation to local conditions with farmers' participation may be required.

