

Case Study 7.3-2 Optimizing nitrogen fertilizer management under multiple time demands. Small holder farmers in many parts of the world are continuously searching for new ways to add to their limited household income. In recent years in China, this has meant most available labor has left the farm to work in construction of the country's updated infrastructure. Existing technology suggested that farmers growing high yielding irrigated crops should split N application for highest grain yields and to optimize N use efficiency. However, the value of off farm employment to these workers means that there is no labor left at home to apply the N split at appropriate growth stages.

Controlled-release fertilizer technology provides the farmer with an additional "source" of fertilizer N which allows all N to be applied at planting, but subsequently released at various times over the growing season. Often these controlled-release N products are mixed with untreated N fertilizer to allow for immediate N supply, as well as the deferred N at a later date. The added cost of these products to the farmer is often more than compensated for by the income from off farm labor, and the efficiency of the controlled-release product allowing the farmer to apply his normal rate, or in many cases a reduced rate. **Source:** IPNI China, unpublished data.

Treatment	Sichuan	Chongqing	Hubei	Jiangxi
----- Rice yield, kg/ha -----				
Check (no N)	4,167	5,635	6,243	5,623
Urea split*	6,996	7,495	7,004	7,667
Urea/CRU**	7,120	8,352	7,524	8,134

* Urea split is 40% urea N prior to transplanting, 60% urea N at 7 to 10 days after transplanting.

**Urea/CRU is 40% urea N prior to transplanting, 60% CRU also prior to transplanting.

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