

## Economic Contribution of Cropping Sequences With and Without Lock-lodged Rice Ratoon

<sup>1</sup>F.C.Oad, <sup>1</sup>A.A. Lakho, and <sup>2</sup>Pompe Sta. Cruz

<sup>1</sup>Sindh Agriculture University Tando Jam Pakistan

<sup>2</sup>Philippine Rice Research Institute (PhilRice) Philippines

**Abstract:** Lock-lodged ratoon added grain yield of 3320 kg<sup>-ha</sup> (P 15770.00) under low costs of added inputs (P 6963.40) with contributed benefits of P 68570.00 within a short period of 60 days. Lock-lodged ratoon separately generated a high worth of P 146.78<sup>-ha-day</sup> compared to wet Season Rice (P 98.13) and Dry Season Rice (94.53). Economic contribution of lock lodged ratoon crop with cropping sequences gave a net income of P 31539.68 (P 86.41<sup>-ha-day</sup>) in the cropping sequence of Wet Season Rice-Lock-Lodged Ratoon- Dry Season Rice. Lock-lodged ratoon may contribute additional benefit of P 15770.00<sup>-ha</sup> with added cost of P 6963.40<sup>-ha</sup> compared to lands left fallow after Wet Season Rice.

**Key Words:** Rice Ratooning, Locklodging- Economics

### Introduction

A current belief is that the real price of rice will continue to fall as per capita rice production increases (Newsweek, 1986), and that the cost of purchased inputs and labor, compared to rice, will continue to decrease. If this scenario is credible, then cost reducing technology, such ratooning, will gain relevance as an option to planting a second rice crop, provided farmers are confident they can realize reasonable ratoon yields (Flinn and Mercado, 1988). An advantage of ratooning other than production cost is its short duration compared to planted rice, thus, a ratoon crop provides the opportunity for second rice harvest. Assuming all inputs are valued at their market price, the full cost of ratooning was 70% less than the cost of full duration crop. Thus, economic analysis so far presented implies that a farmer's objective is to maximize profits, stability of income and expected returns. Considering all these aspects, this research was an attempt to assess the economic contribution of cropping sequences with and without lock lodged rice ratooning.

### Materials and Methods

The field experiment was conducted at Philippine Rice Research Institute (PhilRice) located at Maligaya, Muñoz Nueva Ecija, Philippines. Fertilizer at the rate of 60kg N<sup>ha</sup> in two equal splits, one at harvest of main crop as basal N and other at 20 days after harvest of main crop was applied to PSB Rc8 rice variety. All the field practices in main crop for land preparation, sowing and maintenance were adopted as recommended by PhilRice, Philippines.

**Making Lock-Lodging:** The stubbles were braided in pair by bending the straw from each hill forward to either the left or right. They were pressed flat to the ground

surface. The straw each pair of adjustment formed X, as viewed directly from above. The lock lodging process was pursued across the field, permanently locking the straw of each hill into a prone position (Calendacion *et al.* 1991).

### Results and Discussion

Partial analysis of costs, benefits and economic contribution of lock lodged ratoon estimated according to local markets showed that, lock lodged ratoon separately generated a high worth of P 146.78<sup>-ha-day</sup> compared to Wet Season Rice (P 98.13) and Dry Season Rice (P 94.53) (Table 1). Further lock lodged ratoon may contribute additional benefit of P 15770.00<sup>-ha</sup> with added cost of P 6963.40<sup>-ha</sup> compared to lands left fallow after wet season rice (Table 2).

When lock lodged ratoon was added with cropping sequence gave a net income of P 31539.60 (P 86.41<sup>-ha-day</sup>) when lock lodged ratoon was included in the cropping sequence of Wet Season Rice - Lock-lodged Ratoon - Dry Season Rice. In contrast, cropping sequence without lock-lodged ratoon had a net income of P 22733.00 (P 62.28<sup>-ha-day</sup>). Lock lodged ratoon added grain yield of 3320 kg<sup>-ha</sup> (P 15770.00) under low costs of added inputs (P 6963.40) with contributed benefits of P 68570.00 within a short period of 60 days (Table 2). Lock lodged ratoon separately and with cropping sequences contributed an additional income. Further, due to short maturity days (60 days), and less added inputs it produced 62.88% of main crop's grain yield.

### Conclusion/Suggestions:

The results of this study showed that ratooning does not need land preparation, sowing or seeding and transplanting. It requires minimum amount

**F.C.Oad et al., Economic Contribution of Cropping Sequences With and Without Lock-lodged Rice Ratoon**

**Table 1: Production costs and benefits of one year cropping sequence Wet- Season Rice -Lock Lodged Ratoon and Dry Season Rice**

Cropping Schedule	Production costs* P/ha	Grain yield kg/ha	Gross return P/a	Net Margin	
				P/ha	P/ha/day**
Wet Season Crop(118 days)	14821.00	5280.00	26400.00	11579.00	98.13
Lock lodged Ratoon crop (60 days).	6963.40	3320.00	15770.00	8806.60	146.78
Dry season Rice crop (118 days).	15246.00	5280.00	26400.00	11154.00	94.53

- \* Land preparation, irrigation, seed establishment expenses.
- \*\* Paddy sales for main crop at P 5/kg and ratoon crop at p 4.75/kg.
- \*\*\* P 27.00=1.00 US \$ in Philippines & Rs.35.00= 1.00 (during the year 1993)

**Table 2:- Economic contribution of cropping sequence with and without lock lodged ratoon**

Cropping Sequence	Total Yield Kg <sup>-ha</sup>	Production Costs kg <sup>-ha</sup>	Added Yield kg <sup>-ha</sup>	Value of Added Yield p <sup>-ha</sup>	Cost of Added inputs p <sup>-ha</sup>	Added profit p <sup>-ha</sup>	Gross Return p <sup>-ha</sup>	Net Margin	
								p <sup>-ha</sup>	p <sup>-ha</sup> -day **
WSR-LLR-DSR	13880	37038.40	3320	15770	6963.40	16688	68570	31539.68	86.41
WSR-FL-DSR	18560	30067.00	----	----	----	----	52800	22733.00	62.28

Total net benefit

\* P/ha/day =-----  
365

\*\* = Costs and profits estimated according to local market

WSR = Wet Season Rice, DSR = Dry Season Rice, LLR = Lock-lodged Ratoon FL = Fallow Land

of fertilizer and less labor and irrigation frequencies, in addition to that it has short growth duration. Therefore lock lodging culture is strongly recommended to increase cropping intensity and supplement yield potentials by 62.88%, reduced main crop costs by 53% and earn a net margin of P 146.78<sup>-ha-day</sup> compared to wet and dry seasons rice crop (P 98.13 and 94.53<sup>-ha-day</sup> respectively.

**References**

Calendacion, N. A., Garrity, D.P., and K.T. Ingram. 1991. Lock lodging: A New technology for Ratoon Rice Cropping. IRRI. Los Banos, Laguna. Philippines.  
 Elias, R.S. 1969. Production and minimal tillage. Outlook Agric. 6: 76-70.  
 Flinn, J.C., and M.D. Mercado. 1988. Economic prospective of rice ratooning. p 17-29. In Rice Ratooning. International Rice Research Institute, Philippines.  
 Newsweek, 1986. The Rice Wars. 107: 30-35.

Samson, B.I. 1980. Rice ratooning effects of varietal type and some cultural management practices. Unpublished MS Thesis, Univ. Philippines.  
 Srinivsan, K. 1988. Effect of N application timing of ratoon rice, IRRB. 14:6 p 16.  
 Tripathi, R.S. and R.Pandya, 1988. Second crop rice in Rajasthan.Agriculture Research Station, Sanswara, India. IRRN. 13: 50 p.  
 Zandstra, H.G., and B.T. Samson. 1979. Rice ratoon management. Paper presented at the international Rice Research Conference, 17-21 Apr. Manila, Philippines. 10 p.  
 Zhang Hongsong and Guo Xiaohong. 1990. Energy conversion of ratoon rice and its financial benefits. IRRN 15 (5).  
 Zhang Jing Guo. 1991. Hybrid rice ratoon exploited in Sichuan, China. IRRN 16:(15).