

# **INTEGRATED NUTRIENT MANAGEMENT IN PADDY - LATHYRUS CROPPING SYSTEM IN EASTERN VIDARBHA REGION**

**Presented by**

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# Objectives

- 1. To study the effect of different sources of nutrient on Paddy-Lathyrus cropping system.**
- 2. To workout the economics of Paddy-Lathyrus cropping system**

<b>Design</b>	:	Split Plot Design
<b>Treatments</b>	:	12
a. Main plot		4
B. Sub Plot	:	3
<b>Replications</b>	:	3
<b>Plot size</b>		
a. Gross plot	:	4.8 m x 4.2 m
b. Net plot		4.4 m x 3.6m

## **Treatment details**

### **A) Main plot (Paddy)**

N1 - 100 % RDN

N2- 75% RDN+ 25% N through Vermicompost

N3- 75% RDN +25% N through Paddy straw  
compost

N4 - 50% RDN + 50 % RDN ( Vermicompost +  
Paddy straw compost )

### **B) Sub plot (Lathyrus)**

F1 0 % RDN

F2 50 % RDN

F3 100 % RDN

**Table 1. Ancillary characters and yield of Paddy as influenced by different treatments during 2011-12**

<b>Treatments</b>	<b>Plant height (cm)</b>	<b>No. of tillers plant<sup>-1</sup></b>	<b>No. of effect. tillers plant<sup>-1</sup></b>	<b>Length of panicle (cm)</b>	<b>No. of grains panicle<sup>-1</sup></b>	<b>Grain yield hill<sup>-1</sup> (g)</b>	<b>Test wt. (g)</b>	<b>Grain yield (kg ha<sup>-1</sup>)</b>	<b>Straw yield (kg ha<sup>-1</sup>)</b>
<b>N management</b>									
<b>N1</b>	<b>107.33</b>	<b>20.00</b>	<b>15.33</b>	<b>19.33</b>	<b>205.33</b>	<b>39.23</b>	<b>14.80</b>	<b>4191</b>	<b>5882</b>
<b>N2</b>	<b>105.00</b>	<b>20.67</b>	<b>16.67</b>	<b>22.33</b>	<b>206.67</b>	<b>40.23</b>	<b>15.07</b>	<b>4287</b>	<b>6011</b>
<b>N3</b>	<b>104.33</b>	<b>18.67</b>	<b>15.00</b>	<b>18.67</b>	<b>200.67</b>	<b>36.30</b>	<b>14.87</b>	<b>3926</b>	<b>5399</b>
<b>N4</b>	<b>102.67</b>	<b>17.33</b>	<b>13.67</b>	<b>16.00</b>	<b>195.33</b>	<b>33.17</b>	<b>14.30</b>	<b>3773</b>	<b>4990</b>

**Table 2. Ancillary characters, grain and straw yield of Lathyrus as affected by different treatments during 2011-12**

Treatments	Plant height (cm)	No. of branches plant <sup>-1</sup>	No. of pods plant <sup>-1</sup>	Grain yield plant <sup>-1</sup> (g)	Test wt. (g)	Grain yield (kg ha <sup>-1</sup> )	Straw yield (kg ha <sup>-1</sup> )
<b>A) N management</b>							
N1	25.85	<u>3.64</u>	7.31	83.22	7.57	380	<u>469</u>
N2	26.86	<b>3.78</b>	<b>7.56</b>	<b>89.69</b>	7.77	<b>401</b>	<b>497</b>
N3	26.20	3.31	7.16	80.20	7.48	349	407
N4	24.31	3.18	6.16	67.74	7.43	297	353
SE(m)	1.09	0.09	0.19	1.61	0.14	11	16
CD at 5 %	NS	0.33	0.66	5.59	NS	39	57
<b>B) Fertility levels</b>							
F1	24.62	3.15	6.12	73.52	7.31	315	358
F2	26.15	3.50	7.15	81.01	7.61	358	437
F3	26.64	<b>3.78</b>	<b>7.87</b>	<b>86.10</b>	7.77	<b>398</b>	<b>499</b>
SE(m)	0.61	0.12	0.16	1.19	0.13	11	16
CD at 5 %	NS	0.35	0.48	3.57	NS	34	49
<b>C) Interaction)</b>							
SE(m)	1.22	0.23	0.32	2.38	0.26	23	33
CD at 5 %	NS	NS	NS	NS	NS	NS	NS
GM	25.81	3.48	7.04	80.21	7.56	357	431

**Table 3 Paddy grain equivalent yield and economics of Paddy- Lathyrus system as affected by different treatments during 2011-12**

Treatments	Paddy grain equivalent yield (kg ha <sup>-1</sup> )	GMR (Rs ha <sup>-1</sup> )	NMR (Rs ha <sup>-1</sup> )	B:C ratio
<b>A) N management</b>				
N1	4834	68958	41142	2.48
N2	4965	70805	35287	1.99
N3	4517	64326	32231	2.00
N4	4276	60754	7440	1.14
SE(m)	343			
CD at 5%	NS			
<b>B) Fertilizer levels</b>				
F1	4577	65256	28194	1.88
F2	4649	66233	29048	1.91
F3	4717	67143	29834	1.92
SE(m)	19			
CD at 5%	58			
<b>C) Interaction</b>				
SE(m)	39			
CD at 5%	NS			
GM	4648	66211	29025	1.90





















## **Conclusion:**

- 1) Application of 100 % RDN to paddy and lathyrus recorded highest NMR and B:C ratio**
- 2) Application of 75 % RDN through fertilizer+ 25% RDN through vermicompost to paddy and 100 % RDN to lathyrus recorded highest GMR.**





**THANK YOU !**