

RED GRAM TRANSPLANTING TECHNOLOGY

Situation:

Pigeon pea is commonly known in India as *red gram* or *Arhar* or *Tur*. It is a tropical crop predominantly grown in India, during the *khariif* season both as a sole crop or as an intercrop, cultivated in wide range of agro-ecological situations. The plants owes a large measure of its popularity to the fact that it restores nitrogen to the soil and adds a lot of organic matter to the soil. Thus, pigeon pea finds a promising place in crop rotations and crop mixtures. Being a leguminous plant, it is capable of fixing atmospheric nitrogen, and its deep rooting system helps in extracting nutrients and moisture from deeper soil layers, thus making it suitable for rainfed conditions. The deep root system of the crop also helps in breaking plough pans, thereby improving soil structure. Hence, it is sometimes called a ‘biological plough’.

Nearly 5.14 lakh ha is under red gram in Karnataka state, with a production of 2.42 lakh tons giving an average yield of 766 kg / ha. Bidar district is considered as the pulse bowl of Karnataka, where pulses like black gram, green gram, red gram and Bengal gram are major crops grown on 2.14 lakh ha. Among these pulses, the red gram share is 68,625 ha. Red gram is one of the most important commercial crops for dryland farmers. The average yield levels of the crop for the world, nation, state and district are given below :

Table 1. Average productivity levels (kg/ha)

World	National	State	District	Potential	Yield gap
714	685	766	829	2,700	1,871

To close this yield gap (1,871 kg/ha.) KVK-Bidar organized a farmer-scientist interface meeting wherein progressive farmers and KVK scientists discussed various aspects of boosting the yield levels of red gram, finally arriving at the ideas of “transplanting / dibbling technology.”

To assess this idea, the scientists of KVK designed trials about transplanting technology.

Feeler trial during : 2004-05

OFTs conducted : 2005-06 and 2006-07

FLDs conducted : 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14 & 2014-15

[OFTs = On-farm trials; FLDs = Front-line demonstrations]

DETAILS OF ON-FARM TRIALS & FRONT-LINE DEMONSTRATIONS :

OFT RESULTS (2005-06)

Technology	Production (qtls/ha.)		BC Ratio	
	Irrigated	Rainfed	Irrigated	Rainfed
Farmer's practice (sowing)	16.12	13.12	5.24	4.62
Technology assessed (dibbling)	20.67	16.25	7.08	5.64
Technology refined (transplanting)	48.75	34.67	12.09	8.31

OFT RESULTS (2006-07)

Technology	Production (qtls/ha.)	
	Irrigated	Rainfed
Farmer's practice (sowing)	7.00	6.50
Technology assessed (dibbling)	13.00	12.50
Technology refined (transplanting)	58.08	38.25

These above results clearly indicated that transplanting method was found superior, recording the highest yields under both rainfed and irrigated condition. The increased yield may be due to the advanced date of sowing and to optimum plant geometry.

FLD RESULTS (2010-11)

No. of farmer	Demo. area (ha)	Demo. yield (q/ha.)	Check yield (q/ha.)	% increase
15	15	29.7	17.5	69%

ECONOMIC IMPACT DURING 2010-11 – MARKET RATE (RS. 4200/ QTL)

Sl. No.	Particulars	Average yield (q/ha)	Cost of Cultivation (Rs./ha.)	Gross income (Rs./ha)	Net Income (Rs./ha.)	B:C Ratio
1	Transplanting technology	29.7	17,500	124,740	107,240	1 : 6.12
2	Farmers practice (sowing method)	17.5	15,000	73,000	58,500	1 : 3.90

FLD RESULTS (2011-12)

No. of farmer	Demo. area (ha)	Demo. yield (q/ha.)	Check yield (q/ha.)	% increase
25	10	28.56	12.0	138

ECONOMIC IMPACT DURING 2011-12 – MARKET RATE (RS. 4800/ QTL)

Sl. No.	Particulars	Average yield (q/ha)	Cost of Cultivation (Rs.)/ha.	Gross income (Rs./ha)	Net Income (Rs./ha.)	B:C Ratio
1	Transplanting technology	28.56	16,250	137,088	120,838	1 : 7.43
2	Farmers practice (sowing method)	12.0	15,250	57,600	42,350	1 : 2.77

FLD RESULTS (2012-13)

No. of farmer	Demo. area (ha)	Demo. yield (q/ha.)	Check yield (q/ha.)	% increase
34	12	29.80	15.0	70%

ECONOMIC IMPACT DURING 2012-13 – MARKET RATE (RS. 4,200/ QTL)

Sl. No.	Particulars	Average yield (q/ha)	Cost of Cultivation (Rs.)/ha.	Gross income (Rs./ha)	Net Income (Rs./ha.)	B:C Ratio
1	Transplanting technology	29.80	16,250	125,160	108,910	1 : 7.70
2	Farmers practice (Sowing method)	15.0	11,750	63,000	51,250	1 : 5.36

FLD RESULTS (2013-14)

No. of farmer	Demo. area (ha)	Demo. yield (q/ha.)	Check yield (q/ha.)	% increase
20	8	23.47	15.0	51%

ECONOMIC IMPACT DURING 2013-14 – MARKET RATE (RS. 3,600/ QTL)

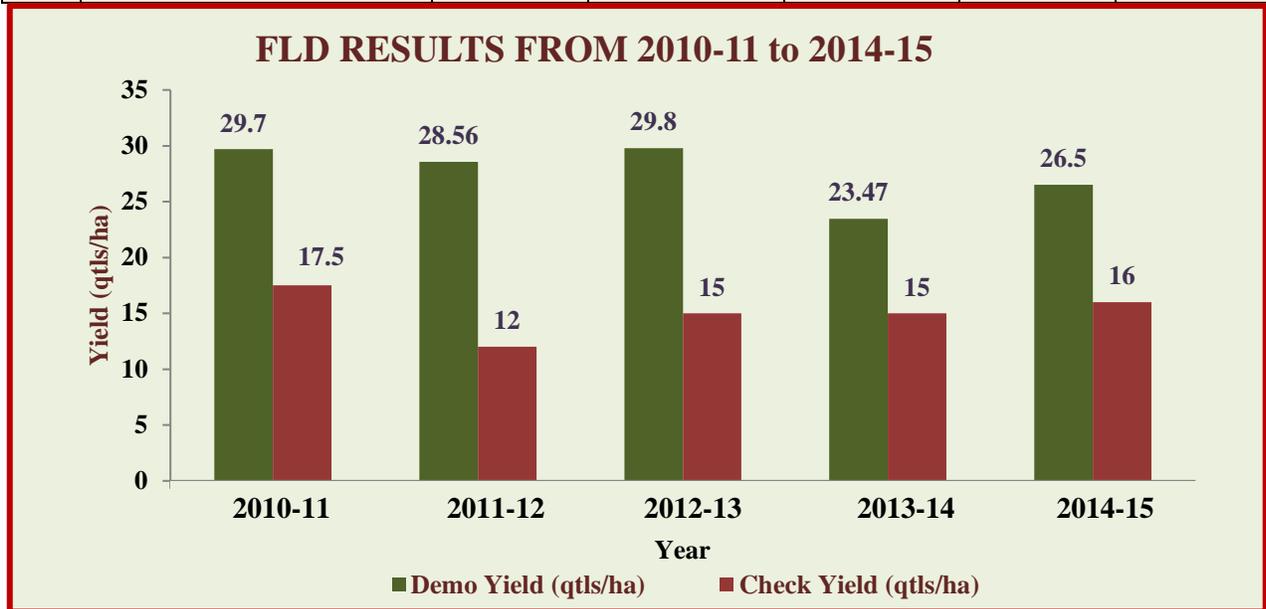
Sl. No.	Particulars	Average yield (q/ha)	Cost of Cultivation (Rs.)/ha.	Gross income (Rs./ha)	Net Income (Rs./ha.)	B:C Ratio
1	Transplanting technology	23.47	18,250	84,492	66,242	1 : 4.62
2	Farmers practice (Sowing method)	15.50	14,760	55,800	41,040	1 : 3.78

FLD RESULTS (2014-15)

No. of farmer	Demo. area (ha)	Demo. yield (q/ha.)	Check yield (q/ha.)	% increase
10	4	26.50	16.0	66%

ECONOMIC IMPACT DURING 2014-15 – MARKET RATE (RS. 3,656/ QTL)

Sl. No.	Particulars	Average yield (q/ha)	Cost of Cultivation (Rs./ha.)	Gross income (Rs./ha)	Net Income (Rs./ha.)	B:C Ratio
1	Transplanting technology	26.50	19,250	96,900	77,650	1 : 5.03
2	Farmers practice (Sowing method)	16.00	15,760	60,800	45,040	1 : 3.85



From five years data of FLDs, it was found that there was 51% to 138% increase in yield in transplanting technology when compared to farmers' practice. Due to this technology, red gram growing farmers expressed that earlier they have not harvested this much yield, and they have realized about yield potentiality and maximum profit in red gram.

ABOUT THE TECHNOLOGY

1. Preparation of seedlings

- Preparation of seedlings in May 1st fortnight
- Use polythene bags 4 x 6 inch (150 gauge) (6050 seedlings / ha.)
- Filling with pot mixture
- Arranging & placing filled bags in partial shade
- Dibble the treated seeds
- Watering daily
- Weeding & after care
- Transplant 30 day old seedling.

2. Transplanting in the main field

- Prepare land by ploughing, harrowing & bring to fine tilth
- Soon after receipt of monsoon rains, open furrows at 6 feet apart
- Transplant the seedlings at 3 feet distance by spot application of FYM / vermicompost
- Timely weeding
- Nipping at 30 DAT
- Apply chemical fertilizer by ring method @ 2.5 bag DAP / ha. Along with 20 kg ZnSo₄/ha.
- Take up timely plant protection measures
- Irrigate at flower initiation & Pod filling stage.

Advantages of this technology

- Advanced sowing
- Pod borer damage is less due to advance planting
- Drought resistance due to deep rooting
- Saving in seeds
- Easy to take up plant protection measures
- Increased branching envisages 2-3 fold increase in yield levels
- Tailor made technology for small & marginal farmers.

Extra requirements of this technology

- More labour
- Protective irrigation facilities

Process adopted to spread technology

• Training programmes	:	85
• Field days	:	42
• Exhibitions	:	28
• Radio programmes	:	08
• TV programmes	:	10
• Print media	:	65
• Publication of leaflets	:	20 (1000 each copy)
• CDs prepared	:	2
• Mobile messages	:	110
• Sale of seeds (BSMR-736) under revolving fund	:	900 qtls
• University calendar	:	-

PROCESS OF SPREAD OF RED GRAM TRANSPLANTING TECHNOLOGY



Training on red gram transplanting/ dibbling for progressive farmers of Latur and Osmanabad districts for extension functionaries of Department of Agriculture during 2009-10 Maharashtra : 23rd April, 2011



Tamil Nadu farmers visited transplanted red gram plot



Visit of H'ble. Vice Chancellor Dr. B.V.Patil along with DR and DE, UAS Raichur to transplanted red gram field



SEMINAR ON RED GRAM TRANSPLANTING



VISIT OF PTI DIGNITARIES NEW DELHI TO DEMONSTRATION PLOT

PROCESS OF SPREAD OF RED GRAM TRANSPLANTING TECHNOLOGY



ALL-INDIA RADIO PROGRAMME ON RED GRAM TRANSPLANTING



DOORDARSHAN PROGRAMME ON RED GRAM TRANSPLANTING



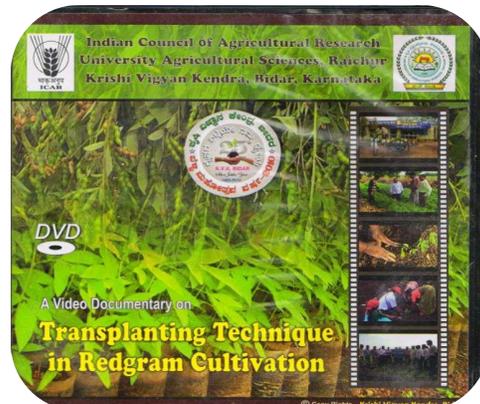
Display of Red gram transplanting technology in Vibrant Gujarat on 3-5th September, 2012



Delivering lecture on Red gram transplanting/dibbling method during summer school on "Resource conservation technology for enhancing input use efficiency and sustainable pulse production" at IIPR, Kanpur (UP), 17th September, 2011

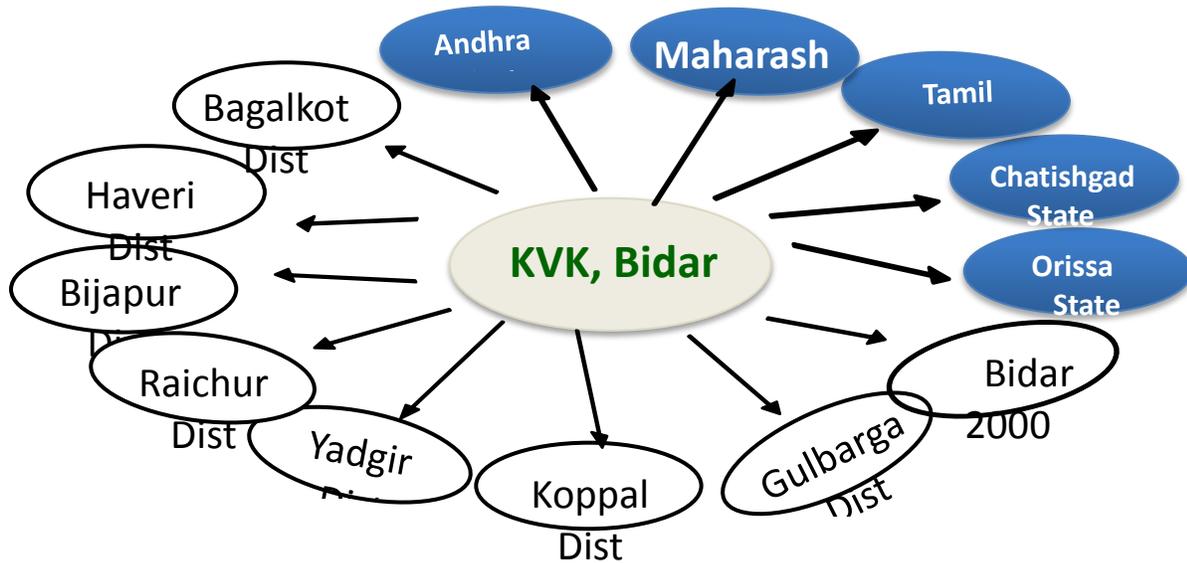


Delivering lecture on Red gram transplanting/dibbling method at State level interference at Tanjavuru (TN), 18th November, 2011



Video DVD on Red Ggram Transplanting (Kannada and English)

Horizontal Spread of the Technology



ECONOMIC IMPACT IN THE DISTRICT

During 2010-11

Area Adopted : 2000 ha.

Market rate @ Rs. 4200/qtls

Sl. No.	Particulars	Average yield (q/ha)	Total production qtls/400 ha.	Value of production Rs. crores
1	Transplanting technology	29.7	59,400	24.94
2	Farmers' practice	17.5	35,000	14.70
Increase in revenue				10.24

During 2011-12

Area Adopted : 4000 ha.

Market rate @ Rs. 4800/qtls

Sl. No.	Particulars	Average yield (q/ha)	Total production qtls/400 ha.	Value of production Rs. crores
1	Transplanting technology	28.56	114,240	54.83
2	Farmers' practice	12.0	48,000	23.04
Increase in revenue				31.79

During 2012-13**Area Adopted : 4200 ha.****Market rate @ Rs. 4200/qtls**

Sl. No.	Particulars	Average yield (q/ha)	Total production qtls/400 ha.	Value of production Rs. In crores
1	Transplanting technology	29.80	125,160	47.98
2	Farmers' practice	15.0	63,600	26.71
Increase in revenue				21.27

During 2013-14**Area Adopted : 4800 ha.****Market rate @ Rs. 3,600/qtls**

Sl. No.	Particulars	Average yield (q/ha)	Total production qtls/400 ha.	Value of production Rs. crores
1	Transplanting technology	23.47	112,656	40.55
2	Farmers' practice	15.50	74,400	26.78
Increase in revenue				13.77

During 2014-15**Area Adopted : 4900 ha.****Market rate @ Rs. 3,656/qtls**

Sl. No.	Particulars	Average yield (q/ha)	Total production qtls/400 ha.	Value of production Rs. crores
1	Transplanting technology	26.50	129,850	47.47
2	Farmers practice	16.00	78,400	28.66
Increase in revenue				18.8

After introduction of transplanting / dibbling technology in red gram and constant efforts made by KVK-Bidar, the area of adoption under this technology in Bidar district and neighbouring districts is being increasing year after year. It is one of the best examples for transfer of technology in recent years after Bt cotton in northern district of Karnataka, due to break-through record yield levels in red gram ecosystems coinciding with increased market prices in pulses. The economic scenario of the district has been completely changed. Lot of new red gram processing units are establishing in Bidar district, simultaneously creating employment opportunities.

Recently red gram growing farmers in the district are started forming associations. In coming future, they are planning to export processed dal to neighbouring states as well as abroad. Further,

due to this technology living standard of red gram growing farmers is being changing slowly in the pulse bowl of Karnataka.

Socio-Economic Impact

Hereto, under irrigated conditions, the main commercial crop was sugarcane in this district which has resulted in power shortage, water scarcity, and market glut. This led to distress of farmers. They were in need of alternative profitable crop to sugarcane. Red gram transplanting technology emerged as a solution.

COMPARISON BETWEEN SUGARCANE & RED GRAM CULTIVATION

Particulars	Sugarcane	Red gram
Duration	12 months	6 months
Nutritional requirement	Exhaustive crop	Improves fertility
Water requirement	High (25 irrigations)	Less (3 irrigations)
Average yield	62.5 ton/ha.	27.5 qtls/ha.
Cost of cultivation	Rs. 65,000/ha.	Rs. 17,500/ha.
Gross returns	Rs. 125,000/-	Rs. 132,000/-
Net return	Rs. 60,000/-	Rs. 114,500/-
Marketability	Perishable, can't be stored	Non-perishable, can be stored

Advantages of Red Gram Cultivation

- Requires less water
- Less duration
- Improves soil fertility
- Non-dependency for marketing

Lessons Learned

- Requires wider spacing of more than 6 feet
- Technology required to restrict the biomass production

Factors of Success

During 2008-13, sugarcane growers were badly hit by low prices coupled with marketing problems and scarcity in water & electricity. Due to these problems, sugarcane growers were in search of an alternative crop at the same time that pulse production was declining in the country. As a result, red gram fetched highest rates. These factors attributed for adoption of red gram transplanting / dibbling technology. This technology increased the name and fame of KVK-Bidar. As a result, it has become talk of the day. We the scientists of KVK-Bidar are proud to record that the hidden potentiality of red gram crop was identified at this centre. Red gram was a neglected crop. By this technology, the crop has become one of the major commercial crops.

TRANSPLANTING IN RED GRAM SCIENTIFIC DOCUMENTARY (IRRIGATION) OF FIVE YEARS 2010-11 to 2014-15

Crop	Name of the technology demonstrated	Variety	Farmin g situation	No. of Demo .	Area (ha)	Yield (q/ha)		% Incr eas e	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo	Check		Gross Cost	Gross Retur n	Net Retur n	** BCR	Gross Cost	Gross Retur n	Net Retur n	** BCR
2010-11																
Red gram	Transplanting in red gram BSMR-736	BSMR-736	Irrigated	13	06	29.70	17.5	71.14	17,820	95040	77220	1:5.33	13720	56000	42280	1:4.08
2011-																
Red gram	Transplanting in red gram BSMR-736	BSMR-736	Irrigated	25	10	28.56	12.00	138	22625	28520	105895	1:5.68	20500	54000	33500	1:2.63
2012-13																
Red gram	Transplanting in red gram BSMR-736	BSMR-736	Irrigated	30	12	29.80	15.0	70.28	16250	125160	108910	1:7.70	11750	63000	51250	1:5.36
2013-14																
Red gram	Transplanting in red gram BSMR-736	BSMR-736	Irrigated	20	8	23.47	15.50	51.41	18250	84492	66242	1:4.62	14760	55800	41040	1:3.78
2014-15																
Red gram	Transplanting in red gram BSMR-736	BSMR-736	Irrigated	10	4	26.50	16.00	65.63%	19250	96900	77650	1:5.03	15760	60800	45040	1:3.85
Mean				19.6	8	27.60	15.2	79.3	18,839	86,022	87,183	1:5.67	15,298	57,920	42,622	1:3.9

TRANSPLANTING METHOD OF RED GRAM CULTIVATION - DEMONSTRATION FARMERS (N=60) 2010-11

Sl.No	Name	Village	Taluka	Variety	Area (Ha)	Yield (Qa/Ha)	Price (Rs/Qa)	Gross Income (Rs/Ha)	Total Cost (Rs/Ha)	Net Profit (Rs/Ha)	B:C Ratio
1	Gurulingappa Melododdi	Hudagi	Humanbad	BSMR-736	1.6	35	4,200	147000	22,250	124,750	6.61
2	Shivakumar Peddi	Hudagi	Humanbad	BSMR-736	0.8	33.75	4,000	135000	22,225	112,775	6.07
3	Mallikarjun Siddan	Hudagi	Humanbad	BSMR-736	0.8	37.5	4,100	153750	22,375	131,375	6.87
4	Dulappa Kumber	Nimbur	Humanbad	BSMR-736	1.2	38.75	4,000	155000	24,625	130,375	6.29
5	IndreshKumar Deshmuk	Nimbur	Humanbad	BSMR-736	1	35	4,000	140000	23,875	116,125	5.86
6	Sunil Reddy	Chitaguppa	Humanbad	BSMR-736	0.8	37.5	4,150	155625	23,875	131,750	6.52
7	Basavaraj Pedagi	Chitaguppa	Humanbad	BSMR-736	0.8	38.75	4,200	162750	24,938	137,813	6.53
8	Shivakumar Adaki	Chitaguppa	Humanbad	BSMR-736	1.2	38.75	4,100	158875	23,750	135,125	6.69
9	Shivasharangouda Patil	Talamadagi	Humanbad	BSMR-736	1.8	32.5	4,150	134875	21,625	113,250	6.24
10	Gurulingappa Pawshetti	Talamadagi	Humanbad	BSMR-736	0.8	38.75	4,100	158875	24,625	134,250	6.45
11	Mallikarjun Patil	Rajgera	Bidar	BSMR-736	0.8	36.25	4,050	146812	23,750	123,063	6.18
12	Muneerruddin	Rajgera	Bidar	BSMR-736	0.8	38.75	4,000	155000	25,000	130,000	6.20
13	Taya Ali	Magadal	Bidar	BSMR-736	0.8	35	4,100	143500	22,875	120,625	6.27
14	Jabbar Patel	Magadal	Bidar	BSMR-736	0.8	36.25	4,000	145000	21,875	123,125	6.63
15	Nandakumar Kulakarn	Magadal	Bidar	BSMR-736	1.2	36.25	4,200	152250	21,375	130,875	7.12
16	Basavaraj Patil	Janawad	Bidar	BSMR-736	0.8	35	4,250	148750	22,500	126,250	6.61
17	Danaraj Patil	Janawad	Bidar	BSMR-736	0.8	32.5	4,100	133250	21,375	111,875	6.23
18	Venkatarao	Janawad	Bidar	BSMR-736	0.6	36.25	4,000	145000	23,375	121,625	6.20
19	Prakash Patil	Astur	Bidar	BSMR-736	1.2	38.75	4,200	162750	21,625	141,125	7.53
20	Shenkar Nagaladiddi	Astur	Bidar	BSMR-736	0.8	35	4,250	148750	24,125	124,625	6.17
21	Galleppa Siddeswari	Jojana	Aurad	BSMR-736	1.2	33.75	4,100	138375	21,750	116,625	6.36
22	Shankareppa Avarave	Jojana	Aurad	BSMR-736	1.2	37.5	4,250	159375	23,375	136,000	6.82
23	Nagashetti Bore	Jojana	Aurad	BSMR-736	1.2	35	4,200	147000	22,475	124,525	6.54

24	Rajkumar Deshmuk	Naganpalli	Aurad	BSMR-736	0.8	36.25	4,150	150437	20,625	129,813	7.29
25	Pundalirao Patil	Naganpalli	Aurad	BSMR-736	1.2	36.25	4,250	154062	22,375	131,688	6.89
26	Anilkumar Swami	Shembelli	Aurad	BSMR-736	1.6	36.25	4,200	152250	22,000	130,250	6.92
27	Siddappa More	Shembelli	Aurad	BSMR-736	1.2	35	4,000	140000	23,375	116,625	5.99
28	Rajshekar Patil	Shembelli	Aurad	BSMR-736	1.6	37.5	4,000	150000	24,625	125,375	6.09
29	Sathish Namosh	Gadikushnoor	Aurad	BSMR-736	1.6	35	4,100	143500	21,375	122,125	6.71
30	Basavaraj Shivapuje	Gadikushnoor	Aurad	BSMR-736	1.8	37.5	4,250	159375	22,375	137,000	7.12

TRANSPLANTING METHOD OF RED GRAM CULTIVATION – NON-DEMONSTRATION FARMERS (N=60) 2010-11

Sl.No	Name	Village	Taluka	Variety	Area (Ha)	Yield (Qa/Ha)	Price (Rs/Qa)	Gross Income (Rs/Ha)	Total Cost (Rs/Ha)	Net Profit (Rs/Ha)	B:C Ratio
1	Sadashiva Kanshetti	Hudagi	Humanbad	BSMR-736	0.8	11.25	4,100	46125	15,250	30,875	3.02
2	Narasappa	Hudagi	Humanbad	Asha	2	10	4,200	42000	15,625	26,375	2.69
3	Anand Gouda	Nimbur	Humanbad	Asha	2	11.25	4,100	46125	15,500	30,625	2.98
4	Dattappa Jathapa	Nimbur	Humanbad	BSMR-736	2	11.25	4,000	45000	15,625	29,375	2.88
5	Nagappa Kolagal	Nimbur	Humanbad	BSMR-736	0.8	13.75	4,150	57062	15,500	41,563	3.68
6	Amaresh Swami	Chitaguppa	Humanbad	Asha	2	10	4,150	41500	15,250	26,250	2.72
7	Rammanna Billigaddi	Chitaguppa	Humanbad	Asha	2	12.5	4,100	51250	14,875	36,375	3.45
8	Channabasanagouda	Talamadagi	Humanbad	Asha	1.2	10	4,050	40500	15,500	25,000	2.61
9	N G Hampanna	Talamadagi	Humanbad	Marithi	1.6	11.25	4,100	46125	15,500	30,625	2.98
10	Naridappa Gaddi	Talamadagi	Humanbad	BSMR-736	1.6	11.25	4,000	45000	15,550	29,450	2.89
11	V B Reddy	Rajgera	Bidar	BSMR-736	0.8	12.5	4,150	51875	15,650	36,225	3.31
12	Basheer Ahmad	Rajgera	Bidar	Asha	1.2	11.25	4,150	46687	15,625	31,063	2.99
13	Basavaraj T	Rajgera	Bidar	Asha	0.8	12.5	4,200	52500	15,600	36,900	3.37
14	Rajsab K S	Magadal	Bidar	BSMR-736	0.8	10	4,150	41500	15,500	26,000	2.68
15	D Eresh	Magadal	Bidar	Maruti	0.8	12.5	4,100	51250	15,500	35,750	3.31
16	Siddanna Gouda	Janawad	Bidar	Maruti	1.2	11.25	4,150	46687	15,625	31,063	2.99
17	D M Amareshnna	Janawad	Bidar	Maruti	2.4	10	4,250	42500	14,875	27,625	2.86
18	Vasanthgouda Roti	Astur	Bidar	BSMR-736	1.2	11.25	4,200	47250	14,750	32,500	3.20
19	Raju Sigli	Astur	Bidar	Maruti	0.8	8.75	4,000	35000	15,375	19,625	2.28
20	Kareppa Daddi	Astur	Bidar	Maruti	0.8	10	4,150	41500	15,250	26,250	2.72
21	Sanjeevakumar	Jojana	Aurad	Asha	2	10	4,150	41500	15,125	26,375	2.74
22	Sharanappa	Jojana	Aurad	BSMR-736	1.2	8.75	4,100	35875	14,975	20,900	2.40
23	Allhuddin	Naganpalli	Aurad	BSMR-736	1.6	11.25	4,100	46125	14,950	31,175	3.09
24	G Kariyya	Naganpalli	Aurad	Maruti	2.4	12.5	4,250	53125	14,875	38,250	3.57
25	G Lachamappa	Naganpalli	Aurad	Maruti	1.2	10	4,200	42000	15,375	26,625	2.73
26	Shitaram	Shembelli	Aurad	Asha	1.4	12.5	4,100	51250	15,300	35,950	3.35
27	Panpanna Venkatesh	Shembelli	Aurad	Marithi	1.6	10	4,000	40000	15,525	24,475	2.58
28	Errayya Swami	Gadikushnoor	Aurad	BSMR-736	1.2	10	4,250	42500	15,375	27,125	2.76
29	Sanna Siddappa	Gadikushnoor	Aurad	Asha	1.2	8.75	4,200	36750	15,375	21,375	2.39
30	Sanna Basanna	Gadikushnoor	Aurad	Maruthi	2	11.25	4,100	46125	15,625	30,500	2.95

COST AND RETURN OF TRANSPLANTING RED GRAM CULTIVATION, 2010-11

Demonstration			Non Demonstration		
Particulars	Frequency	Percentage	Particulars	Frequency	Percentage
Yield/Ha			Yield/Ha		
<35quintals	12	40.00	<10.50 quintals	13	43.33
35-36.50quintals	7	23.33	10.50-11.50 quintals	10	33.33
> 36.50quintals	11	36.67	> 11.50 quintals	7	23.33
Gross Income/Ha			Gross Income/Ha		
< Rs 1,45,700	10	33.33	< Rs 42,800	13	43.33
Rs 1,45,700-1,52,700	9	30.00	Rs 42,800-47,300	10	33.33
>Rs 1,52,700	11	36.67	>Rs 47,300	7	23.33
Cost/Ha			Cost/Ha		
< Rs 22,350	11	36.67	< Rs 15,000	6	20.00
Rs 22,350-23,400	9	30.00	Rs 15,000-15,500	15	50.00
>Rs 23,400	10	33.33	>Rs 15,500	9	30.00
Profit/Ha			Profit/Ha		
< Rs 1,23,000	9	30.00	< Rs 27,500	12	40.00
Rs 1,23,000-1,29,700	7	23.33	Rs 27,500-32,000	10	33.33
>Rs 1,29,700	14	46.67	>Rs 32,000	8	26.67
B:C Ratio		6.53	B:C Ratio		2.94

TRANSPLANTING METHOD OF RED GRAM CULTIVATION – DEMONSTRATION FARMERS (N=60) 2011-12

Sl.No	Name	Village	Taluka	Variety	Area (Ha)	Yield (Qa/Ha)	Price (Rs/Qa)	Gross Income (Rs/Ha)	Total Cost (Rs/Ha)	Net Profit (Rs/Ha)	B:C Ratio
1	Kashinath Danappa	Hudagi	Humanbad	BSMR-736	1.2	27.5	3,950	108625	21,375	87,250	5.08
2	Karibasappa Malashetti	Hudagi	Humanbad	BSMR-736	0.8	30	3,850	115500	22,375	93,125	5.16
3	Udaykumar Patil	Nimbur	Humanbad	BSMR-736	1.6	31.25	4,100	128125	24,750	103,375	5.18
4	Manikrao Deshmukh	Nimbur	Humanbad	BSMR-736	1.4	32.5	3,800	123500	22,475	101,025	5.49
5	Mallikarjun Swami	Nimbur	Humanbad	BSMR-736	1.4	25	4,150	103750	22,500	81,250	4.61
6	Prashanth Borale	Chitaguppa	Humanbad	BSMR-736	0.8	26.25	3,700	97125	22,475	74,650	4.32
7	Panduranga Marata	Chitaguppa	Humanbad	BSMR-736	0.8	27.5	3,800	104500	21,875	82,625	4.78
8	Mallamma Tambaki	Talamadagi	Humanbad	BSMR-736	1	31.25	3,950	123437	23,125	100,313	5.34
9	Shankarappa Tambaki	Talamadagi	Humanbad	BSMR-736	1.4	31.25	4,050	126562	21,625	104,938	5.85
10	Basavaraj Patil	Talamadagi	Humanbad	BSMR-736	1	32.5	3,950	128375	23,000	105,375	5.58
11	Shanthkumar Sherikar	Rajgera	Bidar	BSMR-736	1	26.25	3,990	104737	24,500	80,238	4.28
12	Ramesh Dunasiri	Rajgera	Bidar	BSMR-736	1.4	28.75	3,950	113562	23,125	90,438	4.91
13	Shamrao Kulkarni	Rajgera	Bidar	BSMR-736	1.2	27.5	4,000	110000	23,125	86,875	4.76
14	Basavaraj Gadi	Magadal	Bidar	BSMR-736	0.8	27.5	4,100	112750	22,375	90,375	5.04
15	Sharanappa Patil	Magadal	Bidar	BSMR-736	0.8	30	3,800	114000	23,875	90,125	4.77
16	Ashok Tigale	Janawad	Bidar	BSMR-736	0.8	30	4,000	120000	22,875	97,125	5.25
17	RajKumar Patil	Janawad	Bidar	BSMR-736	0.8	31.25	4,100	128125	20,625	107,500	6.21
18	Veerashetti Malipatil	Astur	Bidar	BSMR-736	0.8	26.25	3,950	103687	23,375	80,313	4.44
19	Nagashetti Malipatil	Astur	Bidar	BSMR-736	1.2	25	4,050	101250	23,875	77,375	4.24
20	Ganapatha Rao	Astur	Bidar	BSMR-736	0.8	25	4,150	103750	21,625	82,125	4.80
21	Shankar Mashetti	Jojana	Aurad	BSMR-736	0.8	25	3,950	98750	21,125	77,625	4.67
22	Santhosh Patil	Jojana	Aurad	BSMR-736	0.8	27.5	3,850	105875	24,625	81,250	4.30
23	Santhosh Reddy	Naganpalli	Aurad	BSMR-736	0.8	28.75	3,950	113562	22,375	91,188	5.08

24	Mukthameya	Naganpalli	Aurad	BSMR-736	1.4	32.5	4,100	133250	23,875	109,375	5.58
25	Rachappa Patil	Naganpalli	Aurad	BSMR-736	0.8	33.75	3,800	128250	21,375	106,875	6.00
26	Rajkumar N K	Shembelli	Aurad	BSMR-736	1.2	32.5	4,050	131625	21,250	110,375	6.19
27	Rajkumar Swami	Shembelli	Aurad	BSMR-736	0.8	30	3,850	115500	21,375	94,125	5.40
28	Umakanth Shivapuje	Gadikushnoor	Aurad	BSMR-736	1.6	31.25	3,880	121250	21,375	99,875	5.67
29	Shivabasappa Patil	Gadikushnoor	Aurad	BSMR-736	1.2	28.75	4,100	117875	24,125	93,750	4.89
30	Chandrappa Patil	Gadikushnoor	Aurad	BSMR-736	0.8	27.5	3,900	107250	23,875	83,375	4.49

TRANSPLANTING METHOD OF RED GRAM CULTIVATION – NON-DEMONSTRATION FARMERS (N=60) 2011-12

Sl. No	Name	Village	Taluka	Variety	Area (Ha)	Yield (Qa/Ha)	Price (Rs/Qa)	Gross Income (Rs/Ha)	Total Cost (Rs/Ha)	Net Profit (Rs/Ha)	B:C Ratio
1	Muttanna Madival	Hudagi	Humanbad	Maruti	0.8	11.25	3,900	43875	15,250	28,625	2.88
2	Anjush Rao	Hudagi	Humanbad	Maruti	2	10	3,950	39500	15,625	23,875	2.53
3	Bhemanna Manik	Hudagi	Humanbad	Asha	2	11.25	3,850	43312	15,500	27,813	2.79
4	Virpakasha	Nimbur	Humanbad	Asha	2	11.25	3,950	44437	15,625	28,813	2.84
5	Eranagouda Patil	Nimbur	Humanbad	Maruthi	0.8	13.75	3,890	53487	15,500	37,988	3.45
6	S Veerasappa	Chitaguppa	Humanbad	Maruti	2	10	3,850	38500	15,250	23,250	2.52
7	Kasimappa H	Chitaguppa	Humanbad	Maruti	2	12.5	3,800	47500	14,875	32,625	3.19
8	Ramswami	Chitaguppa	Humanbad	Maruti	1.2	10	3,950	39500	15,500	24,000	2.55
9	Basavaraj Veeresh	Talamadagi	Humanbad	BSMR-736	1.6	11.25	3,950	44437	15,500	28,938	2.87
10	S Basavaraj	Talamadagi	Humanbad	Maruti	1.6	11.25	3,750	42187	15,550	26,638	2.71
11	Prasanna Ramgir	Rajgera	Bidar	Maruti	0.8	12.5	3,800	47500	15,650	31,850	3.04
12	Mallareddy Gouda	Rajgera	Bidar	Asha	1.2	11.25	3,950	44437	15,625	28,813	2.84
13	Nagaraj Patri	Magadal	Bidar	Maruthi	0.8	12.5	3,950	49375	15,600	33,775	3.17
14	Laxmiputra S T	Magadal	Bidar	Asha	0.8	10	3,850	38500	15,500	23,000	2.48
15	Hanamanth Tanti	Magadal	Bidar	BSMR-736	0.8	12.5	3,900	48750	15,500	33,250	3.15
16	M A Biradar	Janawad	Bidar	Asha	1.2	11.25	3,850	43312	15,625	27,688	2.77
17	Somashekar Patil	Janawad	Bidar	Asha	2.4	10	3,950	39500	14,875	24,625	2.66
18	Ramesh Kumar	Janawad	Bidar	Asha	1.2	11.25	3,850	43312	14,750	28,563	2.94

19	Rammanna Basappa	Astur	Bidar	Marithi	0.8	8.75	3,750	32812	15,375	17,438	2.13
20	Halappa Gouda	Astur	Bidar	BSMR-736	0.8	10	3,850	38500	15,250	23,250	2.52
21	Prakash Kulkarni	Jojana	Aurad	Asha	2	10	3,800	38000	15,125	22,875	2.51
22	Ravikumar Kali	Jojana	Aurad	Asha	1.2	8.75	3,750	32812	14,975	17,838	2.19
23	Shivakumar Patil	Jojana	Aurad	Marithi	1.6	11.25	3,950	44437	14,950	29,488	2.97
24	Urukunda	Naganpalli	Aurad	Asha	2.4	12.5	3,950	49375	14,875	34,500	3.32
25	V Devaraja	Naganpalli	Aurad	BSMR-736	1.2	10	3,850	38500	15,375	23,125	2.50
26	Kareppa	Shembelli	Aurad	Maruti	1.4	12.5	3,700	46250	15,300	30,950	3.02
27	Kareppa Kalitab	Shembelli	Aurad	Asha	1.6	10	3,850	38500	15,525	22,975	2.48
28	Sharanappa V	Shembelli	Aurad	Asha	1.2	10	3,950	39500	15,375	24,125	2.57
29	Venkatesh	Gadikushnoor	Aurad	BSMR-736	1.2	8.75	3,850	33687	15,375	18,313	2.19
30	Channaveer	Gadikushnoor	Aurad	BSMR-736	2	11.25	3,800	42750	15,625	27,125	2.74

Cost and Return of Transplanting Method of Red Gram Cultivation 2011-12

Demonstration			Non Demonstration		
Particulars	Frequency	Percentage	Particulars	Frequency	Percentage
Yield/Ha			Yield/Ha		
<28quintals	13	43.33	<10.50 quintals	13	43.33
28-30quintals	7	23.33	10.50-11.50 quintals	10	33.33
> 30 quintals	10	33.33	> 11.50 quintals	7	23.33
Gross Income/Ha			Gross Income/Ha		
< Rs 1,10,300	12	40.00	< Rs 40,000	13	43.33
Rs 1,10,300-1,19,300	7	23.33	Rs 40,000-44,350	6	20.00
>Rs 1,19,300	11	36.67	>Rs 44,350	11	36.67
Cost/Ha			Cost/Ha		
< Rs 22,200	10	33.33	< Rs 15,200	7	23.33
Rs 22,200-23,100	8	26.67	Rs 15,200-15,400	8	26.67
>Rs 23,100	12	40.00	>Rs 15,400	15	50.00
Profit/Ha			Profit/Ha		
< Rs 87,500	12	40.00	< Rs 24,750	13	43.33
Rs 87,500-96,700	7	23.33	Rs 24,750-29,000	9	30.00
>Rs 96,700	11	36.67	>Rs 29,000	8	26.67
B:C Ratio	5.08		B:C Ratio	2.75	