

Variability in Acreage under Pulses and Oilseed Crops in Chhattisgarh Area of Madhya Pradesh

A K Koshta, K G Agrawal and M R Chandrakar

Department of Agricultural and Natural Resources Economics, Indira Gandhi Krishi Vishwavidyalaya, Raipur - 492 012 India

In relation to demand, production of pulses and oilseed crops have not gone up resulting in increased prices in the market for these crops. Acreage under any crop is a proxy for output of crop and thus supply of a commodity is estimated. A study was made to examine; (i) share of different pulses and oilseed crops in their respective crop group, and (ii) extent of variability in acreage of pulses/oilseed crops in districts of Chhattisgarh region.

Six districts and 114 blocks of Chhattisgarh region, Madhya Pradesh have been chosen for the study. Raipur, Durg and Bilaspur districts have 20 to 40% cropped area under canal irrigation. Rajnandgaon have about 10% and tribal districts Surguja and Raigarh have less than 2% irrigated crop area. Secondary data on area under various pulse/oilseed crops for each block have been taken from the Office of Deputy Director of Agriculture for the period of 1983-84 through 1990-91. Simple coefficient of variation over mean acreage have been computed for each crop and acreage less than 100 ha area has not been included in the analysis.

Acreage under crops

Table 1 shows that 53% of total pulse crop area has been occupied under Lathyrus which is a *Utera* crop broadcasted in canal irrigated paddy field before one month of harvesting. Lathyrus is most uneconomical crop. Gram is a major pulse crop and covers 20% of area under pulse crops. Rajnandgaon district registered maximum percentage under gram. Blackgram ranks third with 12% and covers maximum percentage in Raigarh district. Horsegram covers 7% and grown mostly in tribal districts. Redgram occupied 5% area.

Linseed registered 50% area under oilseeds and its is also a *Utera* crop in canal irrigated area. Rajnandgaon district has maximum area under linseed, where it is grown as sole crop and registered relatively better yield. Nizer is another major oilseed crop grown in 16% area of oilseed crops in Surguja and Raigarh tribal district. It has competi-

tion with rape and mustard acreage especially in Raigarh district. Rape and mustard has got 14% area under oilseed crops. Groundnut registered 10% area and is grown mostly in Raigarh district.

Acreage variability

Maximum and minimum variability in acreage (Table 2) under redgram has been observed in blocks of Durg and blocks of Rajnandgaon districts respectively. More opportunity to extend acreage under redgram exists in blocks of Surguja district where acreage registered less than 5% variability. Blackgram has less than 5% area variability in all blocks of Raigarh and Surguja district. Gram registered minimum acreage variability in blocks of Bilaspur district. Horsegram has minimum variability in acreage in all blocks of Surguja and Raigarh districts.

Groundnut reported less than 5% variability in 98 and 87% area in blocks of Raigarh and Raipur district respectively. Block of Rajnandgaon registered minimum variability in acreage under sesamum and linseed. Rape and mustard has minimum area variability in all blocks of Surguja and Raigarh districts. Nizer reported least and minimum variability in acreage in all blocks of Raigarh and Surguja district, and due to this reason it has become profitable and competitive as compared to rape and mustard crop in Chhattisgarh region of Madhya Pradesh.

Table 3 shows that less than half per cent variability has been registered in acreage under redgram, blackgram and horsegram, rape & mustard and nizer in most of the blocks of Surguja and Raigarh district. Maximum variability in acreage under redgram, blackgram and groundnut has been observed in blocks of Durg district.

Lathyrus and linseed as *Utera* crop under pulse and oilseed group respectively are to be either discouraged or made economically viable through developing new strain of seed for *Utera* cultivation.

Table 1 Area (ha) under pulse and oil seed crops in Chhattisgarh area of MP

S.No.	District	Red gram	Black gram	Green gram	Horse gram	Gram	Lathy. rus	Total	Ground-nut	Sesamum	Linseed	Rape and Mustard	Nizer	Total
1	Raipur	1738 (0.20)	27481 (3.12)	5578 (0.63)	3715 (0.42)	12533 (1.42)	159108 (18.04)	212756 (24.12)	6248 (2.15)	6858 (2.37)	31493 (10.87)	—	—	44599 (15.39)
2	Durg	9217 (1.04)	12988 (1.47)	2726 (0.31)	781 (0.09)	45636 (5.17)	126550 (14.35)	201398 (22.84)	1016 (0.35)	2483 (0.86)	38267 (13.20)	—	—	41766 (14.41)
3	Bilaspur	5113 (0.58)	12689 (1.44)	—	9438 (1.07)	53293 (6.04)	131800 (14.95)	213213 (24.18)	4480 (1.55)	2303 (0.79)	22331 (7.70)	4702 (1.62)	—	33816 (11.67)
4	Rajnandgaon	16654 (1.89)	5031 (0.57)	175 (0.02)	3885 (0.44)	55797 (6.33)	46576 (5.28)	128729 (14.60)	—	3279 (1.13)	44278 (15.28)	1986 (0.68)	—	49543 (17.09)
5	Surguja	7337 (0.83)	19392 (2.20)	—	28122 (3.19)	6442 (0.73)	—	62996 (7.14)	4433 (1.53)	7204 (2.48)	5701 (1.97)	27935 (9.64)	27602 (9.52)	72875 (25.14)
6	Raigarh	1453 (0.16)	33209 (3.76)	2263 (0.26)	17641 (2.00)	3313 (0.38)	4959 (0.56)	62838 (7.12)	13730 (4.74)	2603 (0.90)	359 (0.12)	5875 (2.03)	24659 (8.50)	47226 (16.29)
	Total	41512 (4.71)	110790 (12.56)	10744 (1.22)	63582 (7.21)	177014 (20.07)	468993 (53.18)	881930 (100.00)	29907 (10.32)	24730 (8.53)	142429 (49.15)	40498 (13.97)	52261 (18.03)	289825 (100.00)

Note : Lentil is grown in 9295 ha or 1.05% of total pulse crop area and mostly planted in Durg and Raipur. Its areas is included in total. Figures in parenthesis are per cent of total area under pulses and oil seed crops.

Table 2 Percentage variability [less than 5 (a) and 5 and above (b)] in average acreage under different pulses and oil seed crops.

District	Variability in per cent																					
	Redgram		Black gram		Green gram		Gram		Horse gram		Groundnut		Sesamum		Linseed		Rape & Must.		Nizer			
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b		
Raipur (24)	82.3 (15)	17.7 (2)	60.9 (12)	39.1 (7)	61.4 (7)	38.6 (6)	25.0 (5)	75.0 (11)	100.0 (7)	—	86.9 (5)	13.1 (2)	93.2 (12)	6.8 (1)	77.3 (12)	22.7 (10)	—	—	—	—	—	
Durg (12)	28.4 (2)	71.5 (9)	25.7 (2)	74.3 (9)	39.0 (4)	61.0 (7)	77.9 (3)	22.1 (9)	100.0 (2)	—	—	100.0 (3)	44.9 (2)	55.1 (4)	—	100.0 (12)	—	—	—	—	—	
Rajnand-agon (12)	96.2 (9)	3.8 (1)	38.4 (4)	61.6 (6)	100.0 (1)	—	89.5 (6)	10.5 (6)	66.0 (3)	34.0 (2)	—	—	9.2 (1)	90.8 (8)	94.8 (10)	5.2 (2)	—	—	—	—	—	
Surguja (24)	100.0 (19)	—	100.0 (24)	—	—	—	—	—	100.0 (24)	—	—	—	100.0 (11)	—	88.5 (14)	11.5 (1)	100.0 (24)	92.7 (3)	—	—	7.3 (1)	
Raigarh (17)	78.3 (6)	21.7 (1)	100.0 (17)	—	87.7 (6)	12.3 (1)	84.2 (5)	15.8 (2)	95.6 (13)	4.4 (1)	98.1 (12)	1.9 (1)	100.0 (5)	—	—	100.0 (1)	100.0 (10)	—	—	—	97.3 (23)	2.7 (1)

Figures in parentheses denotes number of blocks.

Table 3 Minimum and maximum variability in acreage under pulses and oilseed crops in blocks

Minimum			Maximum		
Block	Variability (%)	Average acreage (ha)	Block	Variability (%)	Average acreage (ha)
Redgram					
Khairagarh ⁴	0.3	3657	Patan ²	18	811
Blackgram					
Pratappur ⁵	0.4	1591	Bemetra ²	18	758
Greengram					
Baramkela ⁶	1	876	Kuud ¹	13	282
Horsegram					
Pondi ³	0.4	2024	Masturi ³	13	198
Gram					
Mungeli ³	1	15996	Gurur ²	16	571
Lathyrus					
Kurud ³	1	16318	Gariyabandh ¹	13	195
Lentil					
Navagarh ²	2	964	Berla ²	11	570
Groundnut					
Baramkela ⁶	1	3388	Bemetra ²	19	604
Sesamum					
Ramanujganj ⁵	1	1848	Dongararh ⁴	12	318
Linseed					
Dongargarh ⁴	2	5123	Janggir ³	13	2137
Rape & Mustard					
Lundra ⁵	0.2	3020	Pondri ²	12	1209
Nizer					
Kusmi ⁵	0.2	4519	Ambikapur ⁴	13	756

Note : Superscript number shows the district as in Table 1

Tribal blocks of Chhattisgarh region in Madhya Pradesh are potentially suitable for accelerated output of blackgram, horsegram, nizer, rape, mustard and groundnut.

RAINFALL AND FERTILITY ON PEARL MILLET

This figure is a replacement of Fig. 2 on page 15 of *Annals of Arid Zone* 32 (1) 13-20 1993

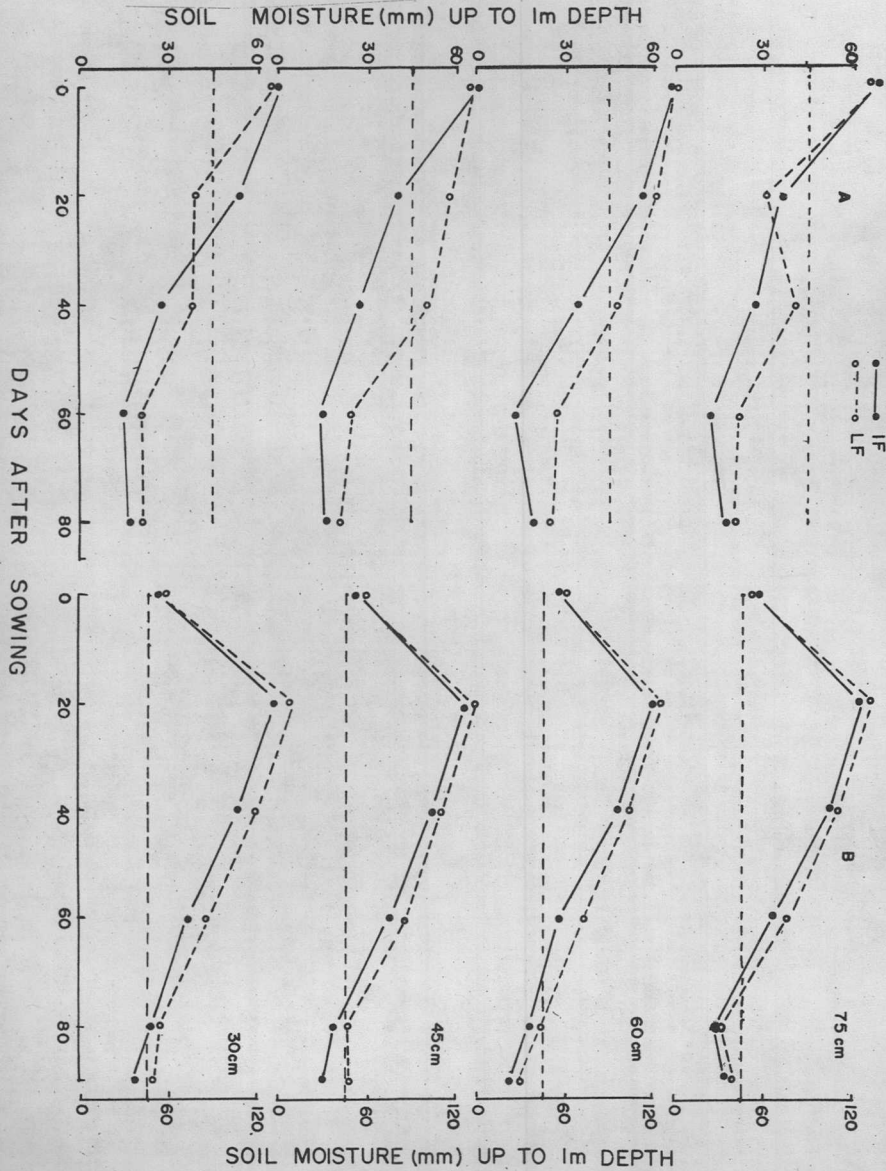


Fig 2 Soil moisture upto 1 m depth beneath a pearl millet crop grown at different row spacings with improved (IF) and low (LF) soil fertility conditions during the drought (A) and good rainfall (B) years. Horizontal broken line indicates the lower limit of soil moisture availability.