

Supplementary Table 1 Area, production and yield of cluster bean in major states during 2010–11 to 2020–21

Year	Rajasthan			Gujarat		
	Area (lakh ha)	Production (lakh t)	Yield (kg/ha)	Area (lakh ha)	Production (lakh t)	Yield (kg/ha)
2010-11	30.0	15.5	515	1.3	0.7	586
2011-12	30.0	18.5	616	1.3	0.7	581
2012-13	45.3	20.2	447	2.1	1.3	601
2013-14	49.2	22.0	512	4.4	1.5	790
2014-15	46.3	27.4	464	2.8	2.2	795
2015-16	39.3	19.4	495	3.1	1.9	611
2016-17	35.3	14.1	398	2.2	1.5	667
2017-	34.3	12.4	363	2.0	1.3	665

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2018-19	30.9	10.3	334	1.3	0.8	562
2019-20	28.4	12.8	452	1.4	1.1	730
2020-21	24.8	11.4	458	1.2	0.9	699

Supplementary Table 2 Compound annual growth rate (%) for acreage, production and yield of cluster bean during the last two decades

Period	Acreage	Production	Yield
2000-01 to 2004-05	-4.8%	8.1%	13.8%
2004-05 to 2009-10	1.1%	-10.0%	-10.8%
2009-10 to 2014-15	15.5%	53.6%	32.5%
2014-15 to 2019-20	-12.4%	-17.5%	-5.7%
2000-01 to 2009-10	-1.7%	-1.2%	0.6%

2010-11 to 2019-20	-0.8%	-2.8%	-2.0%
2000-01 to 2019-10	-0.6%	4.5%	5.1%

Supplementary Table 3 Specific requirements for seed certification of cluster bean

Parameter	Foundation seed	Certified seed
Off-types (%)*	0.10	0.20
Plants affected by seed borne diseases**	0.10	0.20
Pure seed (minimum)	98.0%	98.0%
Inert matter (maximum)	2.0%	2.0%
Other crop seeds (maximum)	10/kg	20/kg
Other distinguishable varieties (maximum)	10/kg	20/kg
Weed seed (maximum)	None	None
Germination including hard seeds (minimum)	70.0%	70.0%

Moisture (maximum)	9.0%	9.0%
For vapour-proof containers (maximum)	8.0%	8.0%

*Maximum permitted at final inspection; **Seed borne diseases shall be: Bacterial blight (*Xanthomonas campestris pv cyamopsidis* Patel, Dhande & Kulkarni); Anthrocanose (*Colletotrichum lindemuthianum* [Sacc.&Magn.] Br. & Cov.) and Ascochyta blight (*Ascochyta* spp.) for hill areas only

Supplementary Table 4 Projected seed requirement of cluster bean to achieve the ideal seed replacement rate

Factor		Seed requirement (A)	Seed requirement (B)
Highest acreage since 2010-11 (lakh ha)	59.6 (2013-14)	125.4 q (Breeder seed)	66.0 q (Breeder seed)
Recent acreage (lakh ha)	31.4 (2020-21)	6270 q (Foundation seed)	3300.0 q (Foundation seed)
Seed rate	15kg/ha	313500 q (Certified seed)	165000 q (Certified seed)
Seed replacement rate	35%		
Expected area			

A. Of the highest acreage	20.9 lakh ha		
B. Of the recent acreage	11.0 lakh ha		
Seed multiplication ratio	1:50		