

August 2015

A brief note on possibilities to shift sugarcane area to castor

The factors like climatic requirement, planting seasons, cropping systems, yield potential, Minimum Support Price (MSP)/market prices and economic returns in respect of sugarcane and castor are compared as under:

Factors	Sugarcane	Castor
Climatic Requirement	Indo-Myanmar China border with New Guinea is considered to be the center of diversity/origin for sugarcane, which is mostly sub-tropical and humid. Long hour of sunshine, cool night, humid and high moisture and black / sandy loam soils are considered favorable for sugarcane cultivation	Castor is a native of Eastern Africa and Ethiopia, which is dry and warm region. Castor is tolerant to drought and grows well in relatively dry and warm region with rainfall of 500-750 mm. Under excessive rains the crop put an excessive vegetative growth. Low humidity is preferred throughout the growing season to produce maximum yield.
Planting season	Spring- February-March Summer- April-May Autumn- September-October	Kharif-July-August Rabi-September-October
Cropping System	Sugarcane- Ratoon-Wheat Paddy-Potato-Sugarcane Paddy-Autumn Sugarcane- Ratoon-Wheat Maize- Sugarcane-Ratoon	Castor-Wheat Castor + Pigeon pea Castor + Groundnut
Potential States	AP, Bihar, Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and UP State wise average (2010-2013) area, production and yields of major sugarcane and castor growing states and highest yield recorded under FLD of these crops is <i>Annexed</i> .	AP and Gujarat
Major castor & S/cane district of AP and Gujarat	AP- Vishakhapatnam, Vijayanagaram, East Gobavari, West Godavari, Krishna and Chittoor Gujarat- Baharuch, Narmada, Navsari, Surat and Junagarh	AP- Kurnool Gujarat- Banaskantha, Mehsana, Kutch, Saberkantha, Surendernagar, Patan

Factors	Sugarcane	Castor
National Average Yield (tonnes / ha)	70.69	1.59
Maximum Yield Potential–FLD(tonnes/ ha)	147.77	2.35
Cost of produce (Rs./ha) at average yield	1,62,587 (@ MSP of Rs. 2300 per tonnes for 2014-15)	73,140 (@ market price of Rs. 46000 per tonnes in Deesa market of Gujarat on 20 th November, 2014)
Cost of cultivation (Rs./ha)	86,650	42,311
Net return (Rs./ha)	75,937	30,829
Major advantages	In additions to sugar and ethanol, it is a major source of green fodder and bagasse as fuel for industry.	Low water requirement, no damage by animals, green leaves as a source of feed for eri silk worm and availability of hybrid technology.
Major disadvantage	High water requirement	Attain more vegetative growth under excessive rains.

Conclusion:

The climatic requirements, planting seasons, area of cultivation of sugarcane and castor are entirely different. Gujarat and AP are the major castor producing states, wherein sugarcane is also grown over a sizable area, however, both the crops are grown in different districts as mentioned in the above statement. Moreover, the economic return from sugarcane (Rs. >75,000 per ha) is much higher than the castor (Rs. >30,000 per ha), therefore, shifting of area from sugarcane to castor may not be feasible.

State wise average (2010-2013) area, production and yields of major sugarcane and castor growing States and highest yield recorded under FLD

(A=Area in lakh ha, P=Production in lakh tonnes and Y=Yield in tonnes/ha)

State	Sugarcane				Castor			
	A	P	Y	FLD*	A	P	Y	FLD*
AP	1.97	15.49	78.47	84.00	2.17	0.92	0.42	2.91
Bihar	2.39	12.14	50.78	-	Negligible			-
Gujarat	1.74	11.87	62.00	126.50	7.32	14.98	2.05	3.79
Haryana	0.94	6.86	72.98	-	0.02	0.02	1.00	2.58
Karnataka	4.21	37.06	88.04	149.10	0.15	0.12	0.80	0.77
Maharashtra	9.64	75.83	78.60	272.00	0.12	0.04	0.33	-
Punjab	0.85	5.77	67.43	101.30	Nil			-
TN	3.62	36.71	101.90	178.00	0.06	0.02	0.32	2.05
UP	22.01	129.49	58.82	123.50	Nil			2.03
All India	50.43	346.10	68.62	147.77	12.23	19.41	1.59	2.35

* Highest yield (kg/ha) recorded under FLD during 2009-10

Note: State and year wise details are appended.

State and year-wise area, production and Yield of Sugarcane

(A=Area in lakh ha, P=Production in lakh tonnes and Y=Yield in tonnes/ha)

S. No.	State	2010-11		2011-12		2012-13		Mean		
		A	P	A	P	A	P	A	P	Y
1	AP	1.92	14.96	2.04	16.73	2.00	15.90	1.99	15.86	79.85
2	Bihar	2.48	12.76	2.35	12.07	1.35	11.58	2.06	12.14	58.92
3	Gujarat	1.90	13.76	2.02	14.17	2.03	14.21	1.98	14.05	70.82
4	Haryana	0.85	6.04	0.95	6.95	1.07	7.59	0.96	6.86	71.71
5	Karnataka	4.23	39.66	4.30	38.81	4.10	32.72	4.21	37.06	88.04
6	Maharashtra	9.65	81.89	10.22	81.86	9.40	61.32	9.76	75.02	76.89
7	Punjab	0.70	4.17	0.80	4.67	0.84	5.04	0.78	4.63	59.32
8	TN	3.16	34.25	3.82	39.28	3.33	34.93	3.44	36.15	105.20
9	UP	21.25	120.55	21.62	128.82	22.77	135.64	21.88	128.34	58.65
10	All India	48.85	342.38	50.85	357.67	51.01	365.33	50.24	355.13	70.69

State and year-wise area, production and Yield of Castor

(A=Area in lakh ha, P=Production in lakh tonnes and Y=Yield in tonnes/ha)

S. No.	State	2010-11		2011-12		2012-13		Mean		
		A	P	A	P	A	P	A	P	Y
1	AP	1.88	1.21	2.54	0.52	2.09	1.03	2.17	0.92	0.42
2	Bihar	Negligible								
3	Gujarat	4.91	9.86	8.78	18.03	8.27	17.04	7.32	14.98	2.05
4	Haryana	Negligible		0.02	0.02	0.01	0.01	0.02	0.02	1.00
5	Karnataka	0.19	0.16	0.16	0.14	0.11	0.07	0.15	0.12	0.80
6	Maharashtra	0.10	0.04	0.08	0.03	0.18	0.05	0.12	0.04	0.33
7	Punjab	Nil								
8	TN	0.06	0.02	0.06	0.02	0.07	0.02	0.06	0.02	0.32
9	UP	Nil								
10	All India	8.80	13.50	14.71	22.95	13.17	21.77	12.23	19.41	1.59