



BT HYBRID COTTON INCREASED COTTON PRODUCTION AND PRODUCTIVITY IN INDIA.



REALLY?

Year	Area under cotton (Mn Hectare)	Area under Bt. cotton (Mn Hectare)	% Area under Bt Cotton	Production (Mn Tons)	Cotton Yield (Kg/Hectare)
2002-03	8.6	0.03	0.3%	2.31	302
2003-04	7.6	0.1	1%	3.04	399
2004-05	8.8	0.5	6%	4.13	470
2005-06	8.7	1.2	14%	4.10	472
2006-07	9.1	3.4	37%	4.76	521
2007-08	9.4	5.5	58%	5.22	554
2008-09	9.0	6.7	74%	4.93	524
2009-10	10.1	8.6	84%	5.19	503
2010-11	11.1	9.6	87%	5.76	517
2011-12	12.2	10.8	88%	6.24	512
2012-13	12.0	10.5	88%	6.29	525
2013-14	12.0	11.0	92%	6.77	566
2014-15	12.8	11.9	93%	6.56	513
2015-16	12.3	10.7	87%	5.64	459
2016-17	10.8	8.9	83%	5.87	542
2017-18	12.4	11.1	89%	6.29	500
2018-19	12.7	11.8	93%	5.66	449
2019-20	12.6	11.7	93%	6.21	460
2020-21	13.3	12.5	94%	5.99	451

Source: Cotton Corporation of India Ltd., DAC&FW, State Government and Directorate of Cotton Development, Nagpur, Parliament Standing Committee Report On Labour, Textiles And Skill Development (2023 24)



Even a cursory glance at this data set should reveal the fact that Bt hybrid cotton is in dire straits in India.



Bt hybrid cotton was introduced in the year 2002. Its adoption rate was less than **10%** in the initial three years till 2004-05. During this period, the cotton production increased **80%** from **2.31 mn ton** to **4.13 mn ton** and the yield increased **56%** from **302 kgs/ha** to **470 kgs/ha**. However, this increase cannot be attributed to Bt hybrid cotton alone as nearly **90%** of the area was under non-Bt cotton.



In the next four years (2004-05 and 2007-08), the adoption of Bt hybrid cotton accelerated to **60%**; whereas the yield increase was only **18%** (i.e., from **470 Kg/Ha** to **554 Kg/Ha**).



However, in the subsequent years till now (2007-08 to 2020-21), there is an alarming decline in the yield of Bt hybrid cotton.



The yield of Bt hybrid cotton in 2020-21 was similar to the yield 15 years ago in 2004-05. **The progress is reversed in direction!**



Consider this simple fact, from 2007-08 till 2020-21 (17 years), the area under cotton increased **46%** from **9.1 mn ha** to **13.3 mn ha**. But the production increased only by **15%**. This clearly shows the major decline in the average cotton yields which registered a negative CAGR of **(-)1%** during this period.



Unfortunately, there is no robust study to explain the underlying causes for the continuing yield decline.



In the year 2007-08, **1.8 ha** of land would produce **1 ton** of cotton in India. Now, it requires **2.2 ha** (i.e., 30% more area) to produce **1 ton** of cotton.



In terms of cotton yield, India ranks **36** globally which is far below such countries as Afghanistan, Benin, Bangladesh, Cameroon, Ethiopia, Iran, Pakistan, Sudan, etc. China's Bt cotton yield is 4 times higher than India.



The average yield of Bt hybrid cotton in Punjab is considerably less than Bangladesh. In both the cases, cotton is grown under 100% irrigated conditions.



Bt hybrid cotton is the only GM crop in India now. Unless and until the mess in India's Bt hybrid cotton is studied, understood and addressed, it would be catastrophic to allow the GM technology in other crops. The recent Parliamentary Standing Committee report (7th February 2024) also stresses the need to fix the poor yield in India's only GM crop – Bt hybrid cotton.

