

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI HARISH RAWAT): (a) to (c) Yes, Sir. Preliminary study conducted by National Research Centre for Banana, Tiruchirapalli, Tamil Nadu has revealed that urine is a source of plant nutrients particularly, nitrogen and its application as liquid manure enhances banana yield and reduces use of chemical fertilizers. Indian Council of Agricultural Research (ICAR) is conducting further studies to validate results.

**Productivity of BT. Cotton**

2504. DR. K.V.P. RAMACHANDRA RAO: Will the Minister of AGRICULTURE be pleased to state:

- (a) whether Government is aware that the productivity of Bt. Cotton is now projected to decline and there are also signs of diminishing returns;
- (b) if so, the details thereof;
- (c) since when Bt. Cotton variety has been introduced in the country;
- (d) the production of cotton since then; and
- (e) the steps being taken in this regard?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI HARISH RAWAT): (a) and (b) Cotton productivity over the past decade (2002-2011), after the introduction of Bt. cotton, averaged at 472 kg/hectare, as compared to an average of 302 kg/ha during the years 1992-2001, prior to the introduction of Bt cotton. Integrated nutrient management strategies besides integrated pest management strategies are continuously advocated in order to sustain the higher yields of Bt. cotton. Soil health management options are also being given due importance.

(c) “Bt. Cotton hybrids containing cry 1AC gene (MON 531) event of M/s Monsanto was the first transgenic crop released in India in April 2002 with the approval of the Genetic Engineering Approval Committee (GEAC), constituted by Ministry of Environment and Forests under Rules 1989 of Environment (Protection) Act, 1986. As of date only Bt. cotton hybrids are under commercial cultivation and no Bt. Cotton variety is commercially cultivated.

- (d) Production of cotton since then (2002-03 to 2011-12) is as under:-

Year	Production in lakh/ bales
2002-03	86.24
2003-04	137.29
2004-05	164.29

Year	Production in lakh/ bales
2005-06	185.00
2006-07	226.32
2007-08	258.84
2008-09	222.76
2009-10	240.22
2010-11	334.25
*2011-12 (estimated)	340.87

\*Provisional

Source: Director of DOCD, Mumbai

(e) The breeder seed production of high yielding conventional cotton varieties/hybrids suited for different agro-climatic situations, released through National Agricultural Research System involving State Agricultural Universities and Indian Council of Agricultural Research institutes are being ensured and distributed for effective seed availability through foundation and certified seed production chain. Central Institute for Cotton Research, Nagpur under ICAR is also engaged in alternate production strategies involving non-Bt varieties under High Density Planting System under low cost production system. Suitable niche areas have been identified in Vidarbha to popularize *desi* cotton to meet the demands of surgical/non-textile sectors, yet providing higher returns to farmers.

#### Procurement of hybrid seeds under PPP Model

2505. SHRI D. RAJA: Will the Minister of AGRICULTURE be pleased to state:

(a) whether Public Private Partnership (PPP) being entered into by various State Governments using Rashtriya Krishi Vikas Yojana (RKVY) funds to procure propriety hybrid seeds of maize, rice, sunflower and other crops have relied on competitive bidding and scientific testing of the seed for the local growing conditions;

(b) if so, the details thereof. State-wise and crop-wise; and

(c) whether such PPP agreements dilute the accountability on the seed provider to norms lesser than what the existing seed laws in the country prescribe?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI HARISH RAWAT): (a) and (b) Yes, Sir. Gujarat State Department of Agriculture is implementing schemes on production and productivity enhancement of different crops viz. Maize, Paddy, Bajra, Bt Cotton, Moong, Mustard, Wheat, Gram etc. since last year. Details of particular crop-variety/hybrid is sought by