

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE & FARMERS' WELFARE
DEPARTMENT OF AGRICULTURE & FARMERS' WELFARE

RAJYA SABHA
UNSTARRED QUESTION NO. 2435
TO BE ANSWERED ON THE 13/03/2026

Climate change induced hormonal imbalance in crops

2435. Dr. Bhim Singh:

Will the Minister of AGRICULTURE AND FARMERS' WELFARE be pleased to state:

- (a) whether climate change induced hormonal imbalance in crops, especially mango, has increased the problem of premature fruit drop; and
- (b) Government's action plan to address the same?

ANSWER

MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
(SHRI BHAGIRATH CHOUDHARY)

(a) Mango fruit drop may occur due to several factors including poor pollination and fertilization, improper embryo development, inadequate irrigation, nutrient deficiencies, and environmental stresses. Climate change can increase environmental stresses through higher temperatures, water stress, strong winds, unseasonal rainfall and hailstorms, or sudden temperature fluctuations during the flowering (anthesis) period, which may lead to poor fruit set and increased fruit drop. Such stress conditions may also cause hormonal imbalance in plants, including increased levels of abscisic acid (ABA) and ethylene, which can contribute to premature fruit drop.

(b) To address the problem of climate change-induced stresses, including their possible impact on crop physiology and premature fruit drop, Government is implementing several programmes through the Indian Council of Agricultural Research (ICAR) and State Agricultural Universities (SAUs) for the development of climate-resilient mango varieties. Arka Udaya, developed by ICAR-Indian Institute of Horticultural Research, Bengaluru, is a climate-resilient variety that fruits during July–August under Bengaluru conditions. The fruits are medium in size (200–250 g), have a bunch-bearing habit and better keeping quality (12–15 days). ICAR-Central Institute for Subtropical Horticulture (CIHS), Lucknow, has developed and released climate-resilient varieties CISH Arunika and Awadh Abhaya. Awadh Abhaya is tolerant to high temperature and anthracnose. Both CISH Arunika and Awadh Abhaya escape heavy rainfall and mature in August. In addition, the late-maturing mango hybrids Pusa Arunima and Pusa Shreshtha, developed by ICAR-Indian Agricultural Research Institute, New Delhi, are tolerant to anthracnose, unseasonal rainfall and other climate change-associated adversities.