GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

LOK SABHA
UNSTARRED QUESTION NO. 1453
TO BE ANSWERED ON 26th July, 2022

HIGH YIELDING VARIETY OF SEEDS

1453. SHRI SUNIL DATTATRAY TATKARE:
SHRIMATI SUPRIYA SULE:
DR. SUBHASH RAMRAO BHAMRE:
SHRI KULDEEP RAI SHARMA:
DR. DNV SENTHILKUMAR. S.:

Will the Minister of AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्री be pleased to state:

(a) whether the Indian Council of Agricultural Research (ICAR) has failed to develop High Yielding Variety (HYV) of Seeds for various crops and if so, the details thereof and the reasons therefor;
(b) the variety of High Yielding Variety of Seeds developed by ICAR, during each of last three years and the current year;
(c) whether productivity level of food grains, pulses and other crops have remained far below than the international levels in spite of development of HYV of seeds by ICAR;
(d) if so, the details thereof and the reasons therefor and the corrective steps taken by the Government in this regard;
(e) whether the Government proposes to depute ICAR agricultural scientists to rural areas to teach farmers about the latest development made in agriculture sector in the country and if so, the details thereof; and
(f) the steps taken by the Government to undertake research and development works and develop new range of crops in order to increase agricultural production?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्री (SHRI NARENDRA SINGH TOMAR)

(a) & (b): No Sir, ICAR has contributed significantly in varietal improvement programmes. Since independence, more than 6100 varieties of field and horticultural crops have been released in India. During past eight years National Agricultural Research System (NARS) under the aegis of Indian Council of Agricultural Research (ICAR) has released 1956 high yielding stress tolerant varieties/ hybrids of field crops of which 1622 are climate resilient. The details are given at **Annexure-I**.

During past three years and current year total 946 varieties of seeds including cereals (379), oilseeds (146), pulses (168), forage crops (55), fibre crops (158), sugarcane (26) and potential crops (14) have been developed of which more than 86% varieties have been developed by ICAR. In horticultural crops, also 317 varieties/ hybrids have been released.

(c) & (d): India with respect to the global productivity is lower in certain crops, while higher in others. The comparative statement is given at **Annexure II**. In addition to productivity *per se*, per day productivity is also important component for determining the genetic potential of crops. Per day productivity of major crops in India is better or at par with any of the high productivity countries. India has multiple cropping system with high cropping intensity, whereas, in high productivity countries, the crops are taking longer maturity duration due to which only one crop can be taken and cropping intensity is low in comparison to India.

India has made a commendable progress in genetic enhancement of different crops and the productivity levels have increased to more than three times (2373 kg/ha during 2020-21 from 710 kg/ha during 1960-61). The present total food grain production of more than 316 million tonnes has been achieved mainly due to enhancement in productivity. The varieties developed by ICAR have revolutionized the Indian agriculture as a result there is 6.19 times enhancement in production of food grains, 3.30 times in pulses, 7.46 times in oilseeds, 10.31 times in cotton and 7.55 times in sugarcane since 1950; and 3.42 times in horticulture crops since 1992-93.

(e): In addition to the network of 731 KVKs for disseminating the latest developments made in agriculture sector in our country, ICAR has adopted 4055 villages by 1154 groups of 4417 scientists for direct interface with the farmers to expedite the lab to land process. During 2021-22, 41402 field activities including field days, trainings, demonstrations, technology awareness programmes were conducted and 662916 farmers were contacted across the country.

(f): Since 2014, 286 varieties have been bred specially for flood/ water submergence/ water logging tolerance (43), drought/moisture stress/ water stress tolerance (175), salinity/ alkalinity/ sodic soils tolerance (36), heat stress/ high temperature tolerance (25), cold/ frost/ winter chilling tolerance (7) using the precision phenotyping tools. Modern molecular tools like genomic selection using molecular markers and genome editing techniques are also being deployed in crop improvement as a result 74 varieties in seven crops namely, rice, wheat, maize, pearl millet, chickpea, soybean and groundnut developed through precision breeding tools have been released for commercial cultivation. Further, ICAR has developed 87 nutrition-rich crop varieties in important crops like rice, wheat, maize, pearl millet, finger millet, small millet, lentil, groundnut, linseed, mustard, soybean, cauliflower, potato, sweet potato, greater yam and pomegranate.

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Annexure – I

[Part (a) & (b) of Unstarred Question no. 1453 answered on 26th July, 2022]

Field crop varieties released since 2014 to 2022

Crops	No. of varieties released (1969-2022)	No. of varieties released (2014-2022)	Climate resilient varieties (2014-22)	Biofortified varieties	Varieties developed by MAS
Cereals	2858	924	807	63	60
Oilseeds	956	291	252	14	8
Pulses	1074	304	270	2	6
Forage crops	221	118	91	-	-
Fibre crops	500	239	154	-	-
Sugar crops	142	64	42	-	-
Others	49	16	6	8	-
Grand Total	**5800**	**1956**	**1622**	**87**	**74**

Annexure – II
[Part (c) & (d) of Unstarred Question no. 1453 answered on 26th July, 2022]

A comparative data on productivity of certain crops in India and the world

Sl. No.	Crops	Yield (Kg/ha)	
		India	World
1	Cereals	3283	4071
2	Pulses	704	964
7	Sugar crops	77347	68456
8	Castor	2167	1678
9	Coconuts	6825	5315
10	Groundnuts	1632	1699
11	Linseed	605	951
12	Rapeseed	1217	2039
13	Safflower	515	800
14	Cotton	1378	2610
15	Sesame	433	487
16	Soybean	928	2784
17	Sunflower	666	1802

Source:FAOSTAT; https://www.fao.org/faostat/en/#data/QCL Citedon 21.07.2022