(d) whether Government would take any step to provide sufficient information and training to farmers in this regard?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI TARIQ ANWAR) : (a) The Central Institute of Post Harvest Engineering and Technology (CIPHET) (ICAR Ludhiana) published a report in September, 2012, based on nationwide sample survey conducted during 2005 to 2007. As per this report losses in selected fruits and vegetables were estimated to be in the range of 5.8% to 18%.

(b) and (c) Assistance for setting up ripening chambers is available under National Horticulture Mission (NHM), Horticulture Mission for North East and Himalayan States (HMNEH) and National Horticulture Board (NHB) schemes.

For the development of post-harvest management, including setting up of ripening chambers, assistance @ 40% (for general areas) and 55% (for hilly and tribal areas) of capital cost of the project at Rs. 1.00 lakh per MT for maximum of Rs. 300.00 lakh is available for both public and private sector enterprises. The subsidy for the private sector is credit linked and back-ended. The schemes are demand driven.

(d) Under these schemes awareness generation programmes in th form of training programmes, seminars, conferences, workshops, exhibitions, kisan melas, horticulture shows are taken up on various aspects of horticulture development.

Contribution of Agricultural Engineering

†934. SHRI RANBIR SINGH PARJAPATI: Will the Minister of AGRICULTURE be pleased to state:

(a) when and why agricultural engineering introduced in the country and in which departments its need has been felt;

(b) which subjects are taught in agricultural engineering and contribution thereof in different fields; and

(c) the number of departments in which agricultural engineering graduates are eligible in States of Haryana, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu, Gujarat, Andhra Pradesh, Himachal Pradesh and Uttarakhand and what are their respective duties in these departments, details thereof along with facts?

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†Original notice of the question was received in Hindi.

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI TARIQ ANWAR) : (a) In India Agricultural Engineering Education, commenced formally in 1942 with the first college at Allahabad Agricultural Institute, Naini, Allahabad.

Agricultural Engineering introduced with a view to ensure judicious use of resources such as land, water and agricultural inputs and to integrate allied sectors such as dairying, fishery, poultry to maximize the farm income. It also involves application of engineering to production, processing, preservation and handling of food, feed and fibre. It also includes the transfer of engineering technology for the development and welfare of rural areas and masses.

Agricultural Engineers are employed in various Departments in the State and Central Governments and in private sectors.

(b) Major subjects of study in Agricultural Engineering are, agricultural process engineering, agricultural statistics, agro-energy, farm power and machinery, instrumentation and computer applications in agricultural engineering, irrigation and drainage engineering, agricultural and food process engineering, soil and water conservation engineering and aerial photography and remote sensing.

These subjects contributes to develop required skill in respective fields for planning, design and execution of related projects/programmes.

(c) The State-wise details of departments in which agricultural engineering graduates are employed and their respective duties are given in Statement.

Statement

State-wise details of Departments in which Agricultural Engineering graduates are employed and their respective duties

Sl.No.	Name of the State	Departments in which Agricultural Engineers are employed	Duties of Agricultural Engineers
1	2	3	4
1.	Haryana	Agricultural engineering graduates are eligible in two departments. In	Teaching to Diploma Agriculture Engineering students

1	2	3	4
		Department of Technical Education, graduate engineers are working as lecturer.	
		In Department of Agricultural engineering graduates are working as Assistant Agricultural Engineers, ADO(FI)	Biogas monitoring, installation of tubewells, development of tubewells and promotion of mechanization.
2.	Madhya Pradesh	Agricultural Engineering graduates are eligible for the post of engineers in the Agriculture Department	Planning and implementation of mechanization schemes and to promote practices of farm mechanization through demonstration and training among the farmers.
3.	Punjab	Department of Agriculture, Department of Soil and Water Conservation	Engineering Section, Department of Agriculture deals with farm power and agricultural machinery extension service and monitoring of ground water exploitation
4.	Rajasthan	Watershed Development and Soil Conservation, Agriculture Department, Panchayati Raj, Forest, Education, Command Area Development	As may be assigned by the respective departments
5.	Tamil Nadu	Agricultural Engineering graduates are eligible for getting the	Implementation and monitoring of various schemes implemented by the Agri-

1	2	3	4
		post of Assistant Engineer (AE) in the Agricultural Engineering Department (AED) if they possess the Bachelor Degree in Agricultural Engineering and they are eligible for getting the post of Assistant Executive Engineer (AE) if they possess the Master Degree in Agricultural Engineering.	cultural Engineering Department such as Land Delopment Scheme, Minor Irrigation Scheme, Agricultural Mechanization Programme under National Agricultural Development Programme, Demonstration of Agricultural Machinery, Training to farmers, soil and water conservation, command area development, rain water harvesting, etc.
6.	Gujarat	Gujarat State Agriculture Department	Activities related to machines/irrigation systems/soil conservation
		Gujarat State Horticulture Department	Activies related to horicultural machines/micro irrigation systems
		Gujarat State Land Development Corporation	Activities related to irrigation and soil conservation
		Gujarat Narmada Nigam Limited	Activities related to irrigation
		State Agricultural Universities of Gujarat	Teaching, research and extension
		Gujarat Green Revolution Company Limited	Micro irrigation systems
		Gujarat Agro Industries Corporation Limited	Promotion of Agro industries
		Gujarat State Forest Development Corporation	Soil conservation activities

1	2	3	4
		Cooperative Dairy	Production activities
		Cooperative Banks	Agricultural Loans
		Nationalized Banks	Agricultural Loans
		Sardar Patel Renewable Energy Research Institute	Research and demonstration
		Gujarat Energy Development Agency	Promotion of energy sources
		Krishi Vigyan Kendra	Extension
		NGOs	Agricultural engineering interventions
		Gujarat Water Resources Development Authority	Activities of ground water, irrigation systems/ soil conservation
		Command Area Development	Irrigation systems/soil conservation
7.	Andhra Pradesh	Department of Agriculture, Department of Horticulture (Micro-Irrigation Programmes), Department of Rural Development (Watershed programmes), Irrigation and Command Area Development Department, AP State Agro Industries Development Corporation, AP State Irrigation Development Corporation, AP State Warehousing corporation, AP Foods, Renewable and	The major duties include design and execution of water management systems (surface, drip, sprinkler, raingun), design and execution of soil and water conservation structures, design of drip and sprinkler irrigation systems, Design and testing of farm machinery including care and maintenance, development of post harvest processing equipment, design of solar energy equipment and water pumping systems, pump selection and

1	2	3	4
		Non-Renewable energy resources development corporation	maintenance, Bio energy equipment design and maintenance, food processing equipment, Poly houses and Polycarbonate houses for control environment etc.
8.	Himachal Pradesh	Departments of Agriculture, H.P Agro-Industries, HP State Council for Science Technology and Environment, State Pollution Control Board and State Agricultural Universities	Planning and Designing of soil and water conservation schemes and monitoring of schemes/works during their execution as per technical specifications etc. by the Sub Divisions and accord the Technical/Financial approval of big/large schemes and also monitor the working of Sub Divisions. Preparation of plan for Implementation of Farm Mechanization programme and their demonstration at field level.
9.	Uttarakhand	Agriculture and Agriculture Marketing, Animal Husbandry and Dairy Development, Basic Education, Disaster Management and Rehabilitation, Drinking Water, Energy, Food and Civil Supplies, Forest, Industrial Development,	Implementation and monitoring of the schemes/programmes as per the requirements in respective Departments.

1	2	3	4
		Infrastructure Development, Irrigation and Minor Irrigation, Non-Conventional Energy, Sugarcane, Technical Education, Watershed Development	

Pests, weeds and other diseases in banana plantation

935. SHRI MOHD. ALI KHAN:
SHRIMATI T. RATNA BAI:

Will the Minister of AGRICULTURE be pleased to state:

(a) whether Government has taken note of banana plantation, hit severely by pests, weeds and other diseases, leading to less production; and

(b) if so, the details thereof during last three years, State-wise and the compensation paid to farmers to offset the losses in such cases. State-wise?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI TARIQ ANWAR): (a) and (b) The State-wise production of banana in the country during last three years is given in Statement (*See* below).

Sigatoka Leaf Spot disease of banana has affected the banana plantations in Maharashtra, Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Uttar Pradesh, West Bengal, Gujarat, Bihar and Assam.

The National Research Centre for Banana, Tiruchirapalli has developed effective management technology for the control of leaf spot disease in banana by integrated management practices. The disease can be controlled effectively by application of fungicides and petroleum oil coupled with field sanitation and removal of affected leaves.

The Department of Agriculture and Cooperation, has launched a programme in collaboration with Govt. of Maharashtra under Rashtriya Krishi Vikas Yojana for the management of leaf spot disease in Jalgaon district comprising of 30,000 ha with a