

**GOVERNMENT OF INDIA  
AGRICULTURE  
LOK SABHA**

UNSTARRED QUESTION NO:4191  
ANSWERED ON:20.12.2011  
ARHAR GENOME DECODING  
Rao Shri Sambasiva Rayapati

**Will the Minister of AGRICULTURE be pleased to state:**

- (a) whether the Arhar Genome has been decoded by Indian agricultural scientists;
- (b) if so, the details thereof; and
- (c) the extent to which it is likely to help in developing new varieties of Arhar?

**Answer**

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE, FOOD PROCESSING INDUSTRIES AND PARLIAMENTARY AFFAIRS (SHRI HARISH RAWAT)

(a) Yes, Madam.

(b) This is the first plant genome sequenced entirely through network of India institutions. In addition to this, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad along with international collaboration also published the draft genome sequence of Arhar. The Arhar genome sequencing programme aimed at understanding tolerance against drought, heat and salinity and resistance against diseases. A total of 47004 protein coding genes in the Arhar genome were identified in which 1213 genes were found linked to disease resistance and 152 genes for tolerance to drought, heat and salinity. The genome sequence was also used to identify large number of markers which will be useful for molecular marker assisted breeding in pigeonpea.

(c) Decoding of genome of pigeonpea will greatly help in improvement of pigeonpea varieties. Knowledge of location of genes in the genome will help faster discovery of genes associated with agronomic traits such as yield, disease and insect resistance, high moisture tolerance and breeding of improved varieties/hybrids of Arhar.