

ICAR identifies five new rice varieties

New improved rice varieties: an alternate for Pusa Basmati 1 and Samba Mahsuri

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The farmers of the traditional Basmati growing areas of Haryana, Punjab, J&K, Delhi and Uttarakhand will get new rice variety having higher yield (37 q/ha) than Pusa Basmati 1. Pusa 1460 (IET 18990) is developed by pyramiding bacterial leaf blight (BLB) resistance genes (xa13 & Xa21) in the background of Pusa Basmati 1 through marker assisted backcross breeding. Similarly, the farmers of Andhra Pradesh, Karnataka, Orissa, Chhatisgarh and Uttar Pradesh will also have new variety, RP BIO 226 (IET 19046) which is improved variety and provides an alternative for popular fine-grained variety Samba Mahsuri.

ICAR has identified five new improved varieties and hybrid of rice for release in different agro-climatic regions of the country. It includes four new improved varieties and one hybrid of rice. These were identified during the 42nd All India Rice Research Group Meeting held recently in Hyderabad after considering various proposals. More than 400 delegates comprising the cooperators of various ICAR centres, Directors of Research of State Agriculture Universities, representatives of private sector and non government organizations participated in the meeting.

Pusa 1460 (IET 18990), a semi dwarf type plant is suitable for irrigated-transplanted production condition. It is developed by Delhi based Indian Agricultural Research Institute under ICAR. Pusa 1460 is the Basmati type product developed using molecular marker assisted selection. It has a flowering duration of 103 days with significantly yield advantage over Tarorai Basmati with yield and quality features on par with Pusa Basmati 1 identified for the traditional Basmati growing areas. The new variety provides an alternative for most popular Basmati variety, Pusa Basmati 1 in the region. This variety is highly susceptible to bacterial blight and has mild aroma. Pusa 1460 is resistance to bacterial leaf blight (BLB) which is severe disease and is one of the major constraints. Basmati or aromatic rice lines are highly susceptible to bacterial blight. Pusa 1460 is the resistant genotype having Basmati quality traits developed through molecular marker. It has strong aroma, less chalky grains and other quality attributes on par with recurrent parent Pusa Basmati 1.

Pusa 1460 has long slender aromatic grains with good KLAC (13.73 mm), intermediate amylose (23.9%), which is highly preferred. It has been rated overall as an acceptable culture in the panel test on account of strong aroma, tenderness on touching and taste. It has less chalky grains as compared to check variety and recurrent parent Pusa Basmati 1. It recorded 28.6 per cent higher yield than Pusa Basmati 1 in Haryana, the heart land of Basmati. Pusa 1460 recorded yield of on par with the national check Pusa Basmati 1 and 23.5 per cent higher yield than Taraori Basmati during Kharif season.

Another rice variety, RP BIO 226 (IET 19046) is developed by Hyderabad based Directorate of Rice Research. This variety is a near isogenic line containing the bacterial blight resistance genes, Xa21, xa13 and xa5 developed in the genetic background of an elite fine grained rice variety, Samba Mahsuri. It is developed through marker assisted backcross breeding.

RP BIO 226 (IET 19046) gives an average yield 46.3 q/ha and is suitable for bacterial leaf blight endemic areas Southern, parts of Eastern and Western zones where fine-grained varieties like

Samba Mahsuri, Sona Mahsuri, PKV HMT, etc are grown. These are susceptible to bacterial leaf blight which is a major disease in rice.

RP BIO 226 has excellent grain and cooking quality. Considering the equivalence in terms of grain and cooking quality, it could serve as a replacement to Samba Mahsuri. The fine grained variety, Samba Mahsuri is presently occupying 3.3 per cent of rice growing area in the country spread over five states, Andhra Pradesh, Karnataka, Orissa, Chhatisgarh and Uttar Pradesh. Samba Mahsuri gets very high premium price of Rs 600-800 per quintal as against other varieties which get Rs 300-400 per quintal.

Tailoring Samba Mahsuri with built-in-resistance to bacterial leaf blight without causing any change in its agro-morphological and physio-chemical characters for which it gets the price and consumer preference are the special features of the RP BIO 226 (IET 19046). It is also developed through marker assisted backcross breeding.

The rice variety MTU 1075 (IET 18482) has shown superior performance for yield (56.3q/ha), resistance to major diseases/pests and with excellent grain and cooking quality characteristic. MTU 1075 is developed by Acharya N G Ranga Agricultural University, Andhra Pradesh. The variety provides alternative/replacement for medium duration varieties during kharif season in the Andhra Pradesh, Tamil Nadu, Kerala, Gujarat, Maharashtra and West Bengal.

The variety UPR 2870 (IET 17544) developed by GB Pant University of Agriculture and Technology. IET 17544, a culture of high yield (70q/ha) potential which surpassed Jaya, NDR 359 and KRH 2 in north western region, also recorded superior yields in western region. It possesses resistance to leaf blast, moderate resistance to BLB, sheath rot, stem borer and leaf folder.

Hybrid Rice International, Hyderabad has developed HRI-152 (IET-18815) for the states of Punjab and Tamil Nadu. The mid-early duration of this hybrid HRI-152 would best fit in cropping pattern viz. rice-wheat, thus increasing productivity of both the crops. Also, its mid-early duration of this hybrid would also contribute in saving the water and uses without reducing the yield. It is high tolerant to leaf blast with a potential to give average yield of 65.8 q/ha.

Rice plays a pivotal role in Indian economy as the staple food for two thirds of the population. Globally, India ranks first in area, 43.6 million ha and second in production (91.7 million t). While almost all the states grow rice, the top seven rice producing states are West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, Orissa, Tamil Nadu and Bihar.

Rice in India is grown under diverse conditions. It is cultivated exclusively as rainfed crop in areas with precarious monsoon and unpredictable rainfall distribution. It is also raised in areas where water level reaches 5 metres or more. The rice culture in Kuttanad district of Kerala is below the sea level, while in the states of J&K, it is grown almost upto an altitude of 2000 msl.

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