Short Communication

RT 351 - A Multicapsular High Yielding White Seeded Sesame Variety

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Sesame (Sesamum indicum L.), commonly known as til, is the oldest indigenous oilseed crop cultivated in the world, particularly in Asia and Africa for its excellent nutritional, medicinal, cosmetic and cooking qualities of its oil (Duhoon et al. 2000). It is a rich source of protein (24%) and carbohydrate (15%) in addition to excellent source of quality oil (50%). In India it is grown in of 1.87 M ha area with production of 0.76 M t (Anonymous, 2009a). Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Andhra Pradesh, Orissa, Tamil Nadu, West Bengal and Karnataka are the major sesame growing states of India. In Rajasthan, it is grown over an area of 0.55 M ha with production of 0.22 M t (Anonymous, 2010). Nearly 30% of the area and production of sesame is from Rajasthan state, but the productivity of the crop is low (408 kg ha$^{-1}$). Farmers of the state, particularly of western region, prefer to grow multicapsular sesame, but such available cultivar is highly susceptible to diseases and pests. Although AICRP, Mandor centre has released three white seeded high yielding sesame varieties, namely RT 46 (1990), RT 127 (1999) and RT 346 (Kumhar et. al., 2009) which also predominate in cultivation of sesame in the state, but all these are having alternate arrangement of capsules (1-2 capsules per node) on plants.

The multicapsular, white and bold seeded sesame variety, RT 351 was developed by pedigree method from the cross between NIC 8409 x RT 127 at AICRP (Sesame) Mandor, Jodhpur. RT 351 was tested at 10 locations in 2007 and 11 locations in 2008 (AVT-I) and 2009 (AVT-II) in All India Coordinated trials of sesame (Anonymous, 2007, 2008, 2009b). The recommended package of practices was followed while conducting the trials. The variety was also screened for its agronomical adaptability for different cropping situations and for diseases and pests at different coordinated centres all over India. The observations for seed yield (kg ha$^{-1}$) and ancillary data including insect pests were recorded and analyzed.

The seed yield data of variety RT 351 along with two checks viz., Pragati (Zonal check) and TKG 22 (National check) at different locations of National Zone-I comprising Agra, Amreli, Dhaulkuan, Hisar, Jhalgoa, Ludhiana, Bhilwara, Sumerpur and Mandor are presented in Table 1. The average seed yield of RT 351 was 629 kg ha$^{-1}$ as against 577 kg ha$^{-1}$ of TKG 22 and 531 kg ha$^{-1}$ of Pragati with yield improvement of 8.9 and 18.3% over the check varieties, respectively. The RT 351 recorded an average oil yield of 308 kg ha$^{-1}$ (Table 2) which is 14.3 and 19.8% higher over both the checks TKG 22 and Pragati, respectively. The data indicated that RT 351 is earlier in maturity (85 days) with average plant height of 100.6 cm., higher 1000-seed weight (3.0 g), oil content (49.7%) and number of capsules per plant (47) compared to the checks. The plant type is branched and dark green in colour with sparse hairy multi-capsules (2-5 capsules node$^{-1}$). Seed colour is shining white, which is suitable for export purpose. This newly selected variety also showed tolerance to Macrophomina stem and root rot, leaf curl, phyllody, Cercospora leaf spot and capsule borer (Antigastra) (Table 3). In Adaptive trials, RT 351 recorded 10.6% yield increase over the best adapted variety RT 46 (226 kg ha$^{-1}$) at farmers’ field.

Looking to its consistence superior performance under rainfed conditions, variety RT 351 was identified by the Varietal Identification Committee in the Annual Group Meeting on Sunflower, Sesame and Niger held at TNAU, Coimbatore from 8-10 April 2010 and subsequently released by Central Sub-Committee on Crop Standards, Notification and Release of Variety vide Notification S.O. 632(E) dated 25.3.2011 for the commercial cultivation in hot and arid ecosystem areas of the National Zone-I, comprising of

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Thus, this multicapsular variety has potential for higher seed yield, oil content, more number of capsules plant\(^{-1}\) and moderately tolerant against major diseases and insect pests, which offers a promise to increase the production and productivity of sesame in Rajasthan as well as in India. Also the whiteness and bold seed size of the developed variety shall increase export avenues and the variety also meets the preference of the farmers’ for multi-capsular nature.

### References


