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Frontline Demonstration on Sesame in West Bengal

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FRONTLINE DEMONSTRATION
ON SESAME IN WEST BENGAL
R. L. Sagar, and Ganesh Chandra

Sesame (Sesamum indicum L) is of improved oilseeds production called as 'queen of oilseeds crops' by virtue of its excellent oil quality. It is having the highest oil content (46-64%) and dietary energy (6355 kcal/kg). Its oil unlike other fats is highly stable and does not develop rancidity leading to loss of flavor and vitamin. India is the largest producer and exporter of sesame in the world (Puspha et al. 2003).

The oilseeds scenario in the country has undergone a sea change. The main contributors to such transformation have been i) availability of improved oilseeds crop in India, which plays a major role in supplementing the income of small and marginal farmers of Sunderbans. One of the major constraints of traditional sesame farming is low productivity of local varieties. To replace this anomaly, Krishi Vigyan Kendra of CIFRI has conducted frontline demonstration at adopted farmers' field in four development blocks viz. Kakdwip, Namkhana, Patharpratima and Kulpi of Sunderbans, West Bengal. Cultivation of high yielding varieties of sesame viz. Rama (Improved Selection-5) and Tilottma (B-67) shows percentage increase of 46.58 and 35.86 respectively over local check. The technology gap which shows the gap in the demonstration yield over potential yield were 163 kg/ha for Rama (Improved Selection-5) to 140 kg/ha for Tilottma (B-67). The highest extension gap of 266 kg/ha was recorded in variety Rama (Improved Selection-5) closely followed by Tilottma (B-67) 227 kg/ha and this high extension gap requires urgent attention by the extension and development agencies. The technology index is 14.0 percent for Tilottma (B-67) and 16.3 percent for Rama (Improved Selection-5) which shows the good performance by these varieties in Sunderbans conditions and this will accelerate the adoption of newer varieties to increase the productivity of sesame in this area. There is a need to adopt multi pronged strategy that involves enhancing sesame production through area expansion and productivity improvements through better adoption of improved technology.

(Key Words: Frontline Demonstration, Technology gap, Extension gap, and Technology index)

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a threat due to inefficiency of processing and marketing and also due to transmission of volatility in world prices to the domestic market. In the medium term, accelerating import substitution, improving efficiency of the oil processing sector, and judicious use of tariffs are vital. (Chand et. al. 2004)

The improved technology packages were also found to be financially attractive. Yet, adoption levels for several components of the improved technology were low, emphasizing the need for better dissemination (Kiresur et al 2001). Several biotic, abiotic, and socio-economic constraints inhibit exploitation of the yield potential and these needs to be addressed.

Sunderbans the largest delta on the planet earth has its population wholly dependent on agriculture and allied activities. Rice is the main crop grown in this area. The sesame crop is mainly cultivated in summer season from February to May in midlands and lowland on residual soil moisture. With the start of technology mission on oilseeds, frontline demonstration on sesame using new crop production technology was started with the objectives of showing the productive potentials of the new production technologies under real farm situation over the locally cultivated sesame crop.

**METHODOLOGY**

The present investigation was carried out during the summer season in the four adopted blocks of Sunderbans namely Kakdwip, Namkhana, Patharpratima and Kulpi in the South 24 Parganas district of West Bengal. Materials for the present study comprised two high yielding varieties of sesame viz. Rama (Improved Selection-5) and Tilottma (B-67) released by Oilseed Research Station, Behrampur, Murshidabad. Locally cultivated varieties were used as local check. The FLD was conducted to study the gaps between the potential yield and demonstration yield, extension gap and the technology index. In the present evaluation study the data on output of sesame cultivation were collected from FLD plots, besides the data on local practices commonly adopted by the farmers of this region were also collected.

To estimate the technology gap, extension gap and the technology index the formulae given at the bottom of the page has been used. (Samui et. al. 2000)

**RESULTS AND DISCUSSION**

Frontline demonstration was conducted on 125 hectares of land with 1450 demonstration plots covering both the sesame varieties. On an average sesame variety Tilottma (B-67) has given higher yield of 860 kg/ha in comparison

| Technology gap = Potential yield – Demonstration yield |
| Extension gap = Demonstration yield - Farmers yield |
| Technology index = (Potential yield – Demonstration yield) / Potential yield} X 100 |
| The soil type was gangetic alluvium (Entisols) and medium to low in fertility status.

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to Rama (Improved Selection-5), 837 kg/ha. The result indicates that the Frontline demonstration has given a good impact over the farming community of Sunderbans as they were motivated by the new agricultural technologies applied in the FLD plots. Yield of sesame was, however, varied in different years, which might be due to the soil moisture availability & rainfall condition, climatic aberrations, disease and pest attacks as well as the change in the location of trials every year. The high yielding varieties had performed extremely well when compared to local check.

The percentage increase in the yield over local check was 46.58 and 35.86 for (Improved Selection-5) closely followed by Tilottma (B-67) 227 kg/ha, which emphasized the need to educate the farmers through various means for the adoption of improved high yielding varieties and newly improved agricultural technologies to reverse this trend of wide extension gap. More and more use of new HYV's by the farmers will subsequently change this alarming trend of galloping extension gap. The new technologies will eventually lead to the farmers to discontinuance of old varieties with the new technology.

The technology index shows the feasibility of the evolved technology at the farmers' field. The lower the value of technology index more is the feasibility of the technology. The technology index is 14.0 percent for Tilottma (B-67) and 16.3 percent for Rama (Improved Selection-5) which shows the good performance by these varieties in Sunderbans conditions and this will accelerate the adoption of newer varieties to increase the productivity of sesame in this area.

CONCLUSIONS

Despite the climatic and natural aberrations faced in Sunderbans areas, the two varieties of Sesame Rama (Improved Selection-5) and Tilottma (B-67) has given a very good result in

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<th>Table-1 Productivity of Sesame, Yield gaps and Technology index</th>
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<tr>
<td><strong>Sesame varieties</strong></td>
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<tr>
<td>Rama (Imp. Sel.-5)</td>
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<td>Tilottma (B-67)</td>
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Rama (Improved Selection-5) and Tilottma (B-67) respectively. The technology gap which shows the gap in the demonstration yield over potential yield were 163 kg/ha for Rama (Improved Selection-5) to 140 kg/ha for Tilottma (B-67). The technology gap observed may be attributed to dissimilarity in the soil fertility status and weather conditions. Hence location specific recommendation appears to be necessary to bridge the gap between the yields of different varieties.

The highest extension gap of 266 kg/ha was recorded in variety Rama (Improved Selection-5) closely followed by Tilottma (B-67) 227 kg/ha, which emphasized the need to educate the farmers through various means for the adoption of improved high yielding varieties and newly improved agricultural technologies to reverse this trend of wide extension gap. More and more use of new HYV’s by the farmers will subsequently change this alarming trend of galloping extension gap. The new technologies will eventually lead to the farmers to discontinuance of old varieties with the new technology.
coastal agro-ecosystem of Sunderbans in comparison to local check. These varieties may be popularized in this area by the extension agencies to mitigate the large extension gap. Mainly small and marginal farmers are associated with the cultivation of sesame in Sunderbans and the use of new production technologies will substantially increase the income as well as the livelihood of the farming community. There is a need to adopt multi pronged strategy that involves enhancing sesame production through area expansion and productivity improvements through better adoption of improved technology.

REFERENCE


