**State wise yield gap between FLD yield and state average yield of Rapeseed-mustard**

Field demonstrations on improved technologies conducted under the direct supervision of scientists of the National Agricultural Research System (NARS) are known as Front Line Demonstrations (FLDs) as the technologies are demonstrated for the first time by the scientists before being introduced into the extension system of the State Department of Agriculture. The main objective of the Front Line Demonstrations is to demonstrate newly released varieties and their improved management practices including crop production and protection technologies in the farmers’ fields under different agro-climatic regions and farming situations. While demonstrating the technologies in the farmers’ fields, the scientists are required to study the factors contributing towards higher crop production, field constraints faced in crop production and thereby generate production data and feedback information.

Front Line Demonstrations are conducted on Indian mustard, toria, brown sarson, yellow sarson, gobhi sarson and karan sarson, collectively known as rapeseed-mustard, under irrigated and rainfed conditions in normal as well as late sown conditions. The results as compiled and reported by the ICAR-Directorate of Oilseeds Research, Hyderabad conducted at different locations of various rapeseed-mustard growing states through the crop based institutes of ICAR and SAUs during the quinquennial 2008-09 to 2012-13 has been compared with the state average yield of rapeseed-mustard. Results of FLDs for the year 2013-14 have not been received yet. FLDs results with whole package technologies under irrigated, normal sown conditions have been included except for Maharashtra and J&K where results of rainfed FLDs have been considered while for Assam and Uttarakhand results on toria have been considered. FLD results from Gujarat and Madhya Pradesh were not available for comparison. State wise average area, production and yield of rapeseed-mustard for the quinquennial 2008-09 to 2012-13 as well as the yield of FLDs during the corresponding period is given in **Table-1.**

An analysis of state average yield of rapeseed-mustard, FLD average yield and yield gap during the quinquennial 2008-09 to 2012-13 revealed the following:

1. Average yield of FLDs in rapeseed-mustard in all the states was higher than the corresponding state average yield (SAY).
2. The state average yields of rapeseed-mustard of four states namely Haryana (16.76 qtls/ha), Gujarat (14.85 qtls/ha), Punjab (12.77 qtls/ha) and Rajasthan (12.35 qtls/ha) were found to be higher than the national average yield of 11.73 qtls/ha **(Fig-1)**.
3. The average yield of FLDs of 7 states namely, Bihar, Haryana, Rajasthan, Punjab, Uttarakhand, Uttar Pradesh and West Bengal were higher than the national average FLDs yield of 14.83 qtls/ha **(Fig-1)**.
4. The average yield gap between the state average yield and FLDs average yield of two states namely J&K and Maharashtra were less than the yield gap at national level i.e. 3.11 qtls/ha, although the average FLDs yield levels of these states were quite low **(Fig-2 & Table-1)**. The yield gap was highest in Bihar followed by Uttarakhand, Assam and WB but the average yield of these states were also reasonably higher. In contrast, although yield gaps were lower in Maharashtra and Jharkhand, the average yields of these states were quite low.
5. Haryana is the only state that realized more than 83% of yield potential of rapeseed-mustard expressed in terms of FLDs yields. J&K (74.98%), Punjab (69.34%) and Jharkhand (67.58%) were the other states realizing maximum of the corresponding potential FLD yields **(Fig-3)**. All other states realized between 41.20 to 66.07% of the FLD yields.

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**Table-1 State wise avg. area, production and yield of rapeseed-mustard for the quinquennial**

**2008-09 to 2012-13**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **State** | **Area  (lakh ha)** | **Production  (lakh tons)** | **State avg yield (kg/ha)** | **FLD avg Yield (kg/ha)** | **%  Area** | **% Production** | **Yield gap** | **% of state avg  yield to FLD avg yield** |
|
| 1 | Assam | 2.40 | 1.37 | 570 | 1292 | 3.78 | 1.88 | 721.54 | 44.13 |
| 2 | Bihar | 0.88 | 0.93 | 1050 | 2398 | 1.39 | 1.28 | 1347.79 | 43.80 |
| 3 | Chhattisgarh | 0.53 | 0.23 | 433 | 1051 | 0.83 | 0.31 | 617.97 | 41.20 |
| 4 | Gujarat | 2.31 | 3.38 | 1485 | 0 | 3.64 | 4.64 | 0.00 | 0.00 |
| 5 | HP | 0.09 | 0.04 | 437 | 941 | 0.15 | 0.06 | 504.24 | 46.40 |
| 6 | Haryana | 5.25 | 8.79 | 1676 | 2013 | 8.29 | 12.07 | 337.19 | 83.25 |
| 7 | J&K | 0.60 | 0.50 | 827 | 1103 | 0.95 | 0.68 | 275.83 | 74.98 |
| 8 | Jharkhand | 1.24 | 0.84 | 649 | 960 | 1.96 | 1.15 | 311.28 | 67.58 |
| 9 | MP | 7.64 | 8.46 | 1107 | 0 | 12.05 | 11.62 | 0.00 | 0.00 |
| 10 | Maharashtra | 0.08 | 0.03 | 314 | 482 | 0.13 | 0.04 | 167.68 | 65.21 |
| 11 | Rajasthan | 28.33 | 34.88 | 1235 | 1923 | 44.69 | 47.90 | 688.30 | 64.21 |
| 12 | Punjab | 0.30 | 0.39 | 1277 | 1842 | 0.48 | 0.53 | 564.73 | 69.34 |
| 13 | UP | 6.80 | 7.91 | 1164 | 1762 | 10.73 | 10.86 | 597.84 | 66.07 |
| 14 | Uttarakhand | 0.15 | 0.13 | 823 | 1817 | 0.24 | 0.18 | 994.39 | 45.28 |
| 15 | WB | 4.24 | 4.03 | 951 | 1698 | 6.69 | 5.54 | 747.07 | 55.99 |
| Others | | 2.62 | 0.96 | 754 | 0 | 4.13 | 1.32 | 0.00 | 0.00 |
| **All India** | | **63.39** | **72.82** | **1173** | **1483** | **100.00** | **100.00** | **310.09** | **79.09** |

**Figure 1**

**Figure 2**

**Figure 3**