***July, 2015***

**Analysis of state wise average yield gaps between FLD and State average yield of soybean (2008-13)**

FLDs aims to demonstrate the improved production technologies evolved, refine and revalidated through the network of various All India Coordinated Research Project (AICRP). FLDs of soybean are conducted by Directorate of Soybean Research (DSR) through the Scientists of AICRP of soybean located in soybean growing States. The year wise details of FLDs conducted between 2008-09 to 2012-13 is given below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **State** | **No. of Centers** | **2008-09** | **2009-10** | **2010-11** | **2011-12** | **2012-13** |
| AP | 01 | 08 | 06 | 06 | 10 | 10 |
| Chhattisgarh  | 01 | 08 | 06 | 0 | 10 | 10 |
| Karnataka | 03 | 41 | 42 | 42 | 70 | 95 |
| MP | 04 | 580 | 252 | 257 | 435 | 410 |
| Maharashtra | 03 | 21 | 19 | 19 | 52 | 49 |
| Rajasthan | 01 | 11 | 10 | 13 | 35 | 63 |
| Punjab | 01 | 11 | 10 | 07 | 10 | 10 |
| Jharkhand | 01 | 08 | 12 | 10 | 19 | 20 |
| Others | 04 | 60 | 105 | 44 | 67 | 88 |
| **Total** | **19** | **748** | **462** | **398** | **708** | **755** |
| **Area in ha** | **299.2** | **184.8** | **159.2** | **283.2** | **302.0** |

 The yield of FLD has been compared with the farmer practice normally adopted for soybean cultivation, which indicates an yield increase from 6% to 76%. To analyze the yield impact of FLD, state average yield and average yield recorded under FLDs in various States have been worked out over a period of five years from 2008-09 to 2012-13 **(Table) and a**nalyzed as under:

1. Average yield of FLD in all the State is higher than the National and as well as State average yield **(Figure-I).**
2. Average yield of Chhattisgarh (1020 kg/ha), Jharkhand (300 kg/ha) and Karnataka (788 kg/ha) is much lower than the National Average Yield (1198 kg/ha) and yield recorded under FLD(1290-2099 kg/ ha) in these States indicates larger scope for yield improvement and area expansion under soybean.
3. Though, larger yield gap of 58% cannot represent the entire soybean growing situation of Karnataka due to large soil variation (laterite to black cotton soils), however, the AICRP centers, who conducted FLDs in the States may be involved in identification of potential areas/districts for area expansion under soybean.
4. Though the statistics about area, production and yield of soybean in Punjab is not available, however, average yield of 1875 kg/ha recorded under FLD in Ludhiana district indicates scope for area promotion of soybean cultivation in Punjab.
5. Moderate yield gap in the States of MP (36%), Maharashtra (45%) and Rajasthan (26%) **(Figure-2)**, which contributes >95% of total soybean production in the country also indicates possibility of yield improvement atleast by 15-20%.

1. Soybean is an exclusively rainfed crop with <1% area under irrigation and more tolerant to dry spell, but is prone to excess rain/water particularly under vertisols, wherein, soybean is normally sown at the time of onset of monsoon. Besides, continuous rains both at the time of sowing and at vegetative growth lead to heavy yield losses. Raised–Bed/Ridge & furrow technology has been found most effective for excess water/moisture management. Emphasis may be laid on FLDs/cluster demonstration on raised – bed / ridge & furrow technology in all soybean growing States for productivity improvement of soybean, which also save quality seeds (30-35 kg/ha). An yield increase of 40-60% has been quoted by adoption of this technology. At least an overall yield increased of 15-20% could be achieved by adoption of this technology.

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**State wise average yield gaps between FLD and State average yield of soybean (2008-13)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **State** | **Average of 2008 - 09 to 2012-13** | **% Area of All India** | **%Prod. of All India** | **% Yield of FLD**  | **Yield gap** |
| **Area (lakh ha)** | **Production (lakh tonnes)** | **Yield (Kg/ha)** | **yield of FLD** |
|
| Telangana \*  | 1.43 | 2.08 | 1455 | **1805** | **1.44** | 1.75 | 81 | 19 |
| Chhattisgarh | 1.00 | 1.02 | 1020 | 2099 | 1.01 | 0.86 | 49 | 51 |
| Jharkhand  | 0.01 | 0.00 | 300 | **1290** | **0.01** | 0.00 | 23 | 77 |
| Karnataka | 1.70 | 1.34 | 788 | 1869 | 1.71 | 1.13 | 42 | 58 |
| MP | 55.47 | 66.01 | 1190 | 1848 | 55.84 | 55.47 | 64 | 36 |
| Maharashtra | 30.08 | 35.82 | 1191 | 2161 | 30.28 | 30.10 | 55 | 45 |
| Rajasthan | 8.29 | 11.39 | 1374 | **1643** | **8.35** | 9.57 | 84 | 26 |
| Punjab | 0.00 | 0.00 | 0.00 | 1875 | 0.00 | 0.00 | 0 | 0 |
| **Others** | **1.35** | **1.34** | **993** | **0** | **1.36** | **1.13** | **0** | **0** |
| **All India** | **99.33** | **119.00** | **1198** | **1824** | **100.00** | **100.00** | **66** | **34** |

\* ***Soybean growing districts of AP are now covered under Telangana***