

Directorate of Pulses Development,
Government of India
Ministry of Agriculture & Farmers Welfare
Deptt. Agri., Cooperation & Farmers Welfare
Bhopal -462004

Dated: 10.10.2016

Sub:-Report on strategies for increasing production of Kharif Pulses-2016 in District Gulbarga & Vijaypur of Karnataka State.

(Ref.: Ministry's Letter No. 3-9/2016-NFSM dated 29th, August, 2016)

Undersigned has attended the Annual Group Meet on Chickpea at Agriculture Research Station, Gulbarga (Karnataka) from August, 29th to 31st, 2016. The programme of Breeder seed production and FLDs on pulses-Chickpea has been finalized by the Director, ICAR-IIPR, Kanpur, during three days Annual Group Meeting. The detail final programme enclosed at *Annex-I*.

Undersigned also have a feed back of programme implementation visited the districts of Kalaburgi (Gulbarga) and Vijaypur (Beejapur) district of Karnataka state. The visit report is given below:

State Brief:

The state total Geographical Area 190.50 lakh ha, cultivable Area is 121.62 lakh ha as per Agri. Census (2010-11). Cultivable area of total Geographical Area is about 64%. Net Cultivated Area is 99.41 lakh ha and Gross Cultivated area is 120.59 lakh ha. Cropping Intensity of the state is 121.30% and Net Area Sown to Cultivable area about 82%. The Net Irrigated Area is 34.40 lakh ha and Gross Irrigated Area is about 41.37 lakh ha. Net Irrigated area about 35% to Net Cultivated area and Rainfed is 65%.

The state of Karnataka is the third largest Kharif pulse growing state in India occupying area of 13.48 lakh ha after Rajasthan and Maharashtra. About 12% of normal and 12.5% of current Kharif pulse is contributed by the state in the total country area under Kharif pulses. The major Kharif prominent crop in the state pigeonpea, contributed more than 65% of Kharif pulse area of state. **Total of 23% pigeonpea area** of the country contributed by the state of Karnataka having second rank after Maharashtra.

Point-wise Information:

1. Rainfall situation of visited district vis-à-vis state

The total seasonal rainfall (June, 1st to to 24th August 2016) as on date was 554 mm, which is 14% less than the state's normal rainfall of 646 mm during the corresponding period.

Table No. 1 Rainfall Status

(Unit: mm)

District	S-W monsoon rainfall pattern (1 st June to 24 th August 2016)		Deviation from Normal		Category
	Normal (mm)	Actual (mm)	(MM)	%	
Vijaypur	249	242	-7.00	- 3	Normal
Kalaburagi	394.40	441.00	46.60	12	Normal
State	646.00	554.00	-92.00	-14	Normal

2. Crop-wise area targets and achievements of Kharif pulses of visited district vis-à-vis state

2.1 The state's normal area under Kharif pulses is 13.48 lakh ha. The state's target for 2016 Kharif season are at 15.36 lakh ha. **Thus the state's target is about 12% higher than the normal area.**

2.2 **Crop-wise status on Kharif Pulses** – crop-wise normal area, targets during 2016 is summarized in the **Table 2**. As on the date of reporting, **coverage under pulses is about 18.24 lakh hectare which is approximately more than 19 % of target and 35 % of normal coverage.**

2.3 The visited district of Vijaypur and Gulberga coverage under pulses > the normal coverage under pulses. Significant increase area under pigeonpea in both the districts. **About 42% of Kharif pulses and 57% of pigeonpea area of the state is centralized in visited districts.**

2.4 Both the districts are kharif pulse dominated. **About 70% and 80 % of total kharif area is covered under pulses in Vijaypur and Gulberga ,respectively. Further, out of which approximate 95% and 85 % of total pulses area is under pigeonpea alone in Vijayapur and Gulberga, respectively.**

Table No. 2 Kharif Pulses Status

Crops	(Area: Lakh ha)								
	Vijaypur			Gulbarga			State		
	Target-2016	Normal*	Ach.**	Target-2016	Normal*	Ach.**	Target-2016	Normal#	Ach.**
Tur	2.81	1.49	2.81	3.63	3.42	3.97	8.51	7.74	11.91
Urd	-	0.001	-	0.25	0.30	0.25	0.80	0.93	0.83
Moong	0.15	0.053	0.14	0.35	0.26	0.53	3.62	2.83	4.15
Horse gram	-	0.035	-	0.002	0.00	0.002	0.85	0.61	0.14
Other Kh. Pulses	-	0.003	-	0.004	0.01	0.004	1.58	1.37	1.21
Total Pulses	2.96	1.606	2.95	4.24	3.99	4.75	15.36	13.48	18.24
% of total Kharif	66	67	70	74	76	81	21	20	26
Total Kharif Crops	4.48	2.39	4.24	5.70	5.24	5.88	73.00	68.22	68.97

*Target Area: SDA, Karnataka * SDA Ave. of 2012-13 to 2014-15 #DES Ave. of 2012-13 to 2014-15*

***achievement as on date 24.08.2016*

3. District-wise and Crop-wise target for cluster demonstrations of Kharif pulses under NFSM.

Total demonstrations conducted under NFSM-pulses during kharif 2016 in the state are in 32666 ha against the target of 67558. In the visited districts cluster demonstrations are conducted 5450 ha in Gulberga and 2350 ha in Vijaypur. The crop-wise demonstrations are given under **Table 3**.

Table No. 3 Crop-wise demonstrations under NFSM: Kharif 2016

Demonstration	Approved Rate of Assistance	(Unit: ha)	
		NFSM	
		Gulbarga	Vijaypur
Cluster Demonstration (100 ha each) ha			
Arhar (Sole)	50% of cost	3250	2350
Arhar (Transplant)	50% of cost	550	00
Urd (Sole)	50% of cost	900	00
Moong (Sole)	50% of cost	400	00
Intercrop Arhar + Bajra	50% of cost	400	
Total		5450	2350

4. Crop-wise target, seed availability for Kharif Pulses-2016

The state has distributed 26984 qtls seed of Kharif pulses. Visited District's (Gulbarga and Vijayapur) share in total pulses seed distribution is about 27% and 14% of total state seed distribution. The details is given below:

Crops	(Quantity: Qtls.)				
	Seed Distribution				
	Distributed			% Distribution	
	Gulbarga	Vijaypur	State	Gulbarga	Vijaypur
Arhar	6900	3945	21157	33	19
Urd	325	-	1094	30	-
Moong	680	173	6219	11	3
Cow pea	-	-	1214	-	-
Total Pulses	7905	4118	29684	27	14

5. Position of seed distribution under NFSM, RKVY/state plans

(Quantity: Qtl.)							
Demonstration	Approved Rate of Assistance	NFSM		RKVY	State Plan	Total	
		Gulbarga	Vijaypur			Gulbarga	Vijaypur
Cluster Demonstration (100 ha each) ha							
Arhar	50% of cost	300	3945			300	3945
Urd	50% of cost	3	18			3	18
Moong	50% of cost	15	174			15	174
Bengal gram	50% of cost	2000	00			2000	00
Total		2318	4137			2318	4137

6. Status of Seed Minikits distribution under NFSM-Pulses: agency-wise

Crops/Variety	NSC			HIL			(Minikit No.)		
	Gulbarga	Vijaypur	State	Gulbarga	Vijaypur	State	Gulbarga	Vijaypur	State
Arhar (BRG-2)	400	500	2500	-	-	00	400	500	2500
Urd (IPU-02-43)	10	-	50	-	-	00	10	-	50
Moong (IPM-02-03)	-	-	00	-	-	10000	-	-	10000
Total Minikit	410	500	2550	-	-	10000	410	500	12550

7. Seed production targets under NFSM and other plan

The state targeted seed production for pulses during 2016-17 is 40000 qutls and programme given to seed producing agencies. Crop wise and agency wise details given in **Table 4: Visited district Gulbarga informed that there is no seed production target assigned for the department** However, allied agency Karnataka state seed corporation agency (KSSC) have set target of 2600 quintals of pulses however, Vijaypur district reported target of area for foundation seed production is 11 ha with production 44 qtl. of pigeonpea variety TS 3R & ICP-8863 and also targeted area 760 ha for certified seed production of 3800 qtl. seed under same variety of pigeonpea.

Table No. 4 Agency wise and crop wise seed production programme during 2016-17

Agency	Unit-Quintal						Total
	Tur	Bengalgram	Greengram	Blackgram	Cowpea	Horsegram	
KSSC	8925	15000	5500	175	200	0	29800
UASB	0	0	150	170	550	200	1070
UASD	700	1100	1000	0	200	0	3000
UASR	3000	500	500	100	0	0	4100
UAHS	1200	470	120	240	0	0	2030
Total	13825	17070	7270	685	950	200	40000

KSSC - Karnataka State Seeds Corporation Ltd; UASB - University of Agricultural Sciences, Bangalore; UASD - University of Agricultural Sciences, Dharward; UASR - University of Agricultural Sciences, Raichur; UAHS - University of Agricultural Sciences, Shimoga

8. Arrangement of inputs-Fertilizer, PP Chemicals

Availability of fertilizers at State:

- Total requirement of fertilizer for Kharif 2016-17 is 21.75lakh tonnes out of which DAP-4.00Lakh tonnes, MOP-2.00 Lakh tonnes, Complex-7.00 Lakh tonnes, Urea 8.00 Lakh tonnes and others 0.75 Lakh tonnes.
- The total supply of different grades of fertilizers for Kharif 2016-17as on 01.09.2016 is 19.00 Lakh tonnes out of which DAP 3.97 Lakh tonnes, MOP-1.13 Lakh tonnes, Complex-6.30 Lakh tonnes, Urea 7.58 Lakh tonnes.
- Up to end of 01.09.2016, 8.68 Lakh tonnes of different grades of fertilizers stocked in both private dealers and co-operative societies (DAP-153253, Urea 319850, Complex-329775 and MOP-65641 Mts).

As on visit, there is no shortage of fertilizers reported in visited districts/state.

Visited district reported that all necessary arrangements of inputs like seeds stock have been made at **Raitha Samparka Kendra (RSK)** at hobli. They are distributing to farmers through department schemes under subsidy and also ensured sufficient seed stock in **licenced private dealers**.

All Necessary arrangements of inputs **like Fertilizer** stock have been made at **private dealers and Primary Agriculture co operative societies**. Details are given **Table No. 5**

All necessary **PP chemicals** which are required for crop growth has been made available at **Raitha Sampark Kendras (RSK)** at Hobli level under 50 percent subsidy and also sufficient stock is made available through licenced private dealers.

Table No. 5 Stock position of fertilizers in visited districts vis-a-vis state

(Unit: Metric Tonne)

Fertilizer	Stock Position of Fertilizers		
	Gulbarga	Vijaypur	State
Urea	11179	13215	327503
DAP	16722	7679	158802
NPK complex	15126	8066	314640
MOP	3160	3897	64804
Total	46187	32857	865749

9. Arrangement of Micronutrients including sulphur and their availability

9.1 State and visited district informed that the sufficient arrangement of micro nutrients.

9.2 In order to ensure the application of required plant nutrients both Macro and Micro, Department is supplying micronutrients such as **Zinc Sulphate, Borax, Micronutrient mixtures, Gypsum** and soil amendments like **Agricultural Lime, Dolomite** etc., to the farmers under subsidy.

9.3 Subsidy is fixed at L-1 rates through e-tendering and supplier is empanelled and the list circulated to all the implementing officers. The implementing officers place the indents with the suppliers of micronutrients indicating quantity, place of supply and delivery etc., At the Head office level periodical review meetings are conducted with the suppliers to ascertain the supply as per the indent, problems if any. **Such problems are sorted out with the concerned supplier and department officers. Wide publicity is also given through print and electronic media. This has helped in creating more awareness which has in turn helped in better consumption of micronutrients.**

9.4 Along with Micronutrients, department has also promoting use of bio fertilizers and organic fertilizers for which also subsidy finalized **through e-tendering and made available at the Raitha Samparka Kendra to reach farmers.**

9.5 Apart from straight sulphur fertilizers and SSP, department is promoting vastly gypsum as a cheap source of sulphur nutrient, under various schemes with subsidy, every year around 1.1 to 1.25 lakh tons of gypsum distributing through Raitha Samparka Kendras to farmers.

9.6 **Necessary arrangements of Micronutrients stock have been made at Raitha Samparka Kendra (RSK) at hobli level and even at Gram Panchyat wise through Farmer Facilitators. They are distributing to farmers through department schemes under subsidy like Zinc sulphate, Boron, Gypsum, Micronutrient Mixtures . The gypsum is applied for sulphur micronutrients. The micronutrients available in licenced private dealers.**

10. Targets for planting of arhar on rice bunds and intercropping of pulses with other crops

The area under rice crop is nearly 3000 hectares in Gulberga district. The target fixed for planting arhar on bunds is @ 10 % of total Rice area i.e. 300 hectares. **The intercropping of pulses with Bajra, Maize and Green gram, Black gram and sesamum is practiced in visited districts.** Target and achievement under intercropping in Gulberga is under Table 6.

Table No. 6 Target and Achievement under intercropping in Gulberga district

S. No.	Crop	Target (ha)	Achievement (ha)
1	Red gram + Bajra	8000	8500
2	Red gram + Maize	4000	2250
3	Red gram + Jowar	1500	1000
4	Red gram + Black gram	20000	21000
5	Red gram + Green gram	25000	23500
6	Red gram + sesamum	6000	5500
	Total	64500	61750

11. Status of occurrence of insect pest and diseases in each of the pulses crops and action taken for control of pests & diseases.

All the preventive measurements have been taken in pulses crop and IPM practices are being followed and practiced in fields through extension functionaries. **And Rapid roving survey will be conducted involving scientists and Department officials and by way of propaganda via media and necessary PP chemicals arrangement have been made at RSK level.**

12. Special initiatives taken for additional area coverage and productivity enhancement for increasing pulses production

- Encouraging farm mechanisation
- Distribution of IPM kits and training to farmers about the IPM techniques
- Encouraging community spraying
- Providing training to farmers about processing and grading of commodities
- Organising micro nutrients campaign
- Organising Kisan gosti, krishi mela/ krishi utsav to encourage and to guide the farmers about new technology
- Guiding the farmers in the field through FFS
- Targeting redgram crop with a yield of 12-15 q/ha
- **Introduced a new pigeonpea variety TS-3R developed by UAS, Raichur** which is a short duration, by which there will be no struggle for moisture during the grain filling stage. It is resistant for wilt disease and grains are bigger than local variety **called Gulyal.**
- Seed treatment bio fungicide like Trichoderma has been distributed at free of cost to all the cultivators.
- For pest management organic & inorganic chemical as well as essential sprayers have been distributed on subsidized rates.
- Whenever protective irrigation facilities are available sprinklers & PVC pipes are also distributed on subsidized rates.
- Every year training programmes in all the major villages are conducted at 4 stages of crop mainly before sowing, during crop period, flowering period, & grain setting period.
- Providing training to farmers about processing and grading of commodities.

13. Initiatives like primary processing of pulses for better realization of prices.

- Every year 10-15 Dal processors are distributed to pigeonpea growers on subsidized rates.
- Every year 50 farmers are taken on tour to know the harvesting, processing, and marketing methods.

14. Monitoring Mechanism by state at district level for inputs arrangements, pest surveillance etc. for districts

- Pest surveillance survey conducted by the scientists of University of Agriculture Sciences, KVKs, and extension staff every year during flowering stage.
- District level PMT is working under NFSM scheme for implementing the pulse and coarse cereal production programme and enhancement both in kharif & rabi seasons.

15. Details of state Nodal Officer dealing pulses: (Name & Designation with address, telephone, email)

District/State	STATE NODAL OFFICER INFORMATION		
	Name & Address	Telephone	Email
Gulbarga	Shri Jeelani Mokashi Joint Director (Agri.)	08472-220270 Cell No. 08277930601	jdagulbarga@gmail.com
Vijaypur (Bijapur)	Shri Manjunath B. Joint Director (Agri.)	08352 -221599, Cell No. 08277931500	jdabijapur@gmail.com
Karnataka	Smt. Ambika N. Joint Director (Agri./NFSM)	080-22212431 22112840 Cell No.07259004011	nfsm.karnataka@rediffmail.com

16. Other issues/observation and suggestion relating to pulses

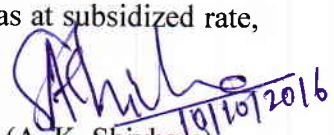
17.1 Visited pigeonpea cluster demonstration at village Kumatagi, Kavalagi and Honnutagi of Vijaypur district. For demonstration inputs provided to farmer are Seeds-20 kg, Trichoderma-2kg, NPK consortia-0.5ltr, PROM(Organic Manure) -100kg, Zinc sulphate – 20kg, Micro nutrient Mixture-Gr-2:(2) -50 kg, Emamectin benzoate-200gm, Neemoil-5ltr, Pendimethylin -2ltr. Technology used Seed treatment with Tricoderma. Two nipping performed at 45 and 65 days after sowing.

17.2 Sowing of green gram as intercrop for mulching, adopting wider row spacing 3.5 feet row to row. Jawar crop use as a Bird perches. Observed Leaf webber in some plot however, its below ETL and suggested spray of prophenophos-50EC@2ml/ltr of water or Methomyl 40 SP @0.6gm/ltr of water. Observed Inter crop with green gram as mulch crop for soil and moisture conservation and give extra income. Also practice cucumber crop as inter crop and farmer got Rs.25,000/- additional income.

17.3 Visited Sardgi village of Gulberga Taluka and, Kalgi and Madbol village of Chittapur Taluka of Gulberga district. In Chhitapur Taluka visited cluster demo on pigeonpea under NFSM conducted in 100 ha. Each farmer have been given 10kg/ha seed of Pigeonpea (Var.TS3R), other inputs given are Tricoderma, PSB, Rhizobium, weedicide, gypsum, insecticide, neem oil, MN liquid and powder. Also visited cluster

demo intercropping Pigeonpea and Bajra conducted in 50ha. Each farmer is given with **3kg of hybrid bajara seeds (var-Vikas)** and **5kg of pigeonpea seeds (var-TS3R)**. Other inputs are given Trichoderma, vermicompost, zinc, zypsum, borax, Azospirillum and mancozeb.

- 17.4 State has taken good initiatives for cluster demonstration under pigeonpea in both the visited districts as the entire cluster seen under the crop in chuck.
- 17.5 About 70-80% areas of Kharif crops under pigeonpea in visited district.
- 17.6 Area of **pigeonpea is mainly under TS-3R about 60-70% fallowed by BSMR-736.**
- 17.7 Variety TS- 3R of pigeonpea replaced local pigeonpea variety Gulyal in last 2-3 years. The characteristics of variety TS-3R are **early medium duration (145-155 days), bold seed (10.5 to 11.5 g) per 100 seed weight, resistant to wilt, high yield potential (14-18 q/ha).**
- 17.8 Mostly pigeonpea crop sown in line through dibbler. Crop at vegetative stage and in good condition expected better yield if further favorable weather harvesting December end to February.
- 17.9 Also visited and interacted with Shri Abdul Jabbar Singh, owner of dal mill of moongbean in Gulberga. Capacity is 6000-6500 quintal/per day.
- 17.10 Visited pigeonpea cluster demo. in both district under (var. TS3R), **Sowing by dibbling method in Gulberga and line sowing in Vijayapur on during last week of June to first week of July, crop at vegetative stage and in good condition. 'Farmer's expected yield 25-30 qtls./ha and last year harvested 20 qtl/ha.**
- 17.11 Also visited field of some other varieties of pigeonpea like **hybrid var. ICPH-2740 sowing 07th, June, RxP spacing 5x2 feet, applied NPK 19:19:19, two nipping have been done at 50 & 70 days crop stage and local variety Gulyal .**
- 17.12 Infestation of tobacco caterpillar has been observed on pigeonpea variety-BSMR-756. Suggested application of Monocrotophos @30 ml/60 lit of water to protect the crop.
- 17.13 Also visited coarse cereal demo. of bajra (var. Ganaga Kaveri) sown during first week of June, crop at **cob stage, farmer's expecting yield is 15 qtl/ha.**
- 17.14 Farmers of Gulbarga and Vijaypur district needs drip irrigation as at subsidized rate, may be included in NFSM-Pulses programme.


(A. K. Shivhare)
Assistant Director