

**VISIT OF NLMT-V TO ODISHA TO MONITOR THE PROGRESS OF IMPLEMENTATION OF NMOOP FROM 28<sup>TH</sup> SEPT. TO 01<sup>ST</sup> OCT., 2015**

## **1. Background**

- 1.1 National Mission on Oilseeds and Oil Palm (NMOOP) is built upon the achievements of the Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM), Tree Borne Oilseeds Scheme and Oil Pal Area Expansion (OPAE) programme during the 11th Plan period. Implementation of these schemes have shown increase in production and productivity of oilseeds, area expansion with increased production of FFBS under oil palm and augmented availability of quality planting materials, pre-processing technologies and awareness about TBOs.
- 1.2 The NMOOP envisages increase in production of vegetable oils sourced from oilseeds, oil palm and TBOs from 7.06 million tonnes (ave. of 2007-08 to 2011-12) to 9.51 million tonnes by the end of Twelfth Plan (2016-17). The Mission is implemented through three Mini Missions with specific targets as under:
- i) MM I on Oilseeds – Production target of 35.51 million tones and productivity of 1328 kg/ha from 28.93 million tonnes and 1081 kg/ha (11<sup>th</sup> Plan period).
  - ii) MM II on Oil Palm- To bring additional 1.25 lakh hectare under oilpalm cultivation through area expansion approach including utilization of watershed with increase in productivity of fresh fruit bunches (FFBs) from 4927 Kg per ha to 15000 kg per ha.
  - iii) MM III on TBOs- Enhance seed collection of TBOs from 9 lakh tonnes to 14 lakh tonnes and to augment elite planting materials for area expansion under waste land.
- 1.3 **The basic strategy** of the Mission is to increasing the Seed Replacement Ratio (SRR) with focus on varietal replacement; increasing **irrigation coverage under oilseeds to 38 percent from 26 percent**; diversification of area from low yielding cereals crops to oilseeds crops; inter-cropping of oilseeds with cereals/ pulses/ sugarcane; use of fallow land after paddy/potato cultivation; expansion of cultivation of Oil palm and TBOs in watersheds and waterlands; increasing availability of quality planting materials of oil palm and TBOs; enhancing procurement of oilseeds and collection and processing of TBOs. Inter cropping during gestation period of Oil Palm and TBOs to provide economic returns to the farmers when there is no production.

## 2. Monitoring Mechanism

S.No.	Level	Formation	Mission structure/ (Composition)	Frequency of Meeting
i.	National	i) Executive Committee (EC)	Union Minister of - Chairperson Agriculture  Mission Director - Member Secretary	6 Monthly
		ii) Standing Committee (SC)	Secretary (A & C)- Chairperson Mission Director - Member Secretary	6 Monthly
		iii) Mission Monitoring Committee (MMC)	Joint Secretary (Oilseeds)- Chairperson  Additional Commissioner - (Oilseeds) Member Secretary	Quarterly
		iv) National Level Monitoring Team (NLMT)	Technical Officers, DAC / CDDs State Department of Agriculture/ Scientist of ICAR/SAUs	Once in a year
ii.	State	State Level Standing Committee	APC/Principal Secretary/Secretary (Agri.) – Chairman  State Mission Director - Member Secretary	
iii.	District	Project Management Team (PMT)		

## 3. NLMT of Odisha : Composition

S.No.	Organization	Names and Designation
i.	Ministry of Agriculture and Farmers Welfare Government of India Department of Agriculture, Cooperation and Farmers Welfare, Shastri Bhavan, New Delhi	Sri M.N Sukumaran Director (OS) and Coordinator
ii.	ICAR- Directorate of Soyabean Research, Indore, MP	Dr.S.D.Billore, Principal Scientist (Agronomy)- (Member)
iii.	Directorate of Pulses Development GoI, Ministry of Agriculture & Farmers Welfare,(Department of Agriculture, Cooperation and Farmers Welfare) Bhopal, MP	Dr. A.L. Waghmare, STA - (Member)
iv.	Department of Agriculture, Government of Odisha,Bhubaneswar	Sri Subhash Panda, APO (Oilseeds)

#### 4. State Profile: Odisha

Total Geographical Area	(lakh ha)	155.71
Total Cultivable area	(lakh ha)	61.80
Total Cropped area	(lakh ha)	83.45
Crop area (lakh ha)	(Kharif)	57.76
	(Rabi)	25.68
Cropping Intensity (%)		167
Irrigated area (lakh ha)	(Kharif)	21.86
	(Rabi)	11.79
Annual Rainfall	(mm)	1502

#### 5. STATE'S CROPS SCENARIO-OILSEEDS

##### i) 2013-14

S. No	Crop	Area(000 ha)		Production(000 tonnes)		Yield(Kg/ha)	
		DES	SDA	DES	SDA	DES	SDA
1.	Groundnut	60.50	267.68	75.90	478.33	1255	1787
2.	Soybean	1.10	0.26	0.70	0.16	623	615
3.	Rapeseed & Mustard	10.20	145.36	2.40	61.63	237	424
4.	Sunflower	21.30	24.88	25.50	29.69	1197	1193
5.	Safflower	0.60	0.88	0.40	0.53	609	602
6.	Castor	11.10	12.73	7.10	8.13	643	639
7.	Sesamum	27.90	212.68	7.20	85.85	257	403
8.	Linseed	24.00	22.92	11.50	10.96	480	478
9.	Niger	68.90	64.84	25.50	23.29	370	359
10.	<b>Total Oilseeds</b>	<b>225.50</b>	<b>752.40</b>	<b>156.10</b>	<b>698.57</b>	<b>692</b>	<b>928</b>

Source-DES, M/A (\*IV advance Estimates), SDA-StateDeptt.of Agri.

##### ii) 2014-15

	Crop	Area (000 ha)		Production (000 tonnes)		Yield (Kg/ha)	
		DES*	SDA	DES*	SDA	DES*	SDA
1.	Groundnut	48.50	259.06	66.80	462.98	1378	1787
2.	Soybean	1.10	1.06	0.70	0.67	632	632
3.	Rapeseed & Mustard	10.10	122.24	2.50	51.83	244	424
4.	Sunflower	21.70	21.73	26.00	25.96	1195	1195
5.	Safflower	0.60	0.64	0.40	0.39	609	609
6.	Castor	11.10	11.07	7.10	7.07	639	639
7.	Sesamum	25.80	233.17	6.70	94.56	261	406
8.	Linseed	24.00	24.02	11.50	11.48	478	478
9.	Niger	68.90	68.90	24.90	24.94	362	362
10.	<b>Total Oilseeds</b>	<b>211.90</b>	<b>741.89</b>	<b>146.50</b>	<b>679.88</b>	<b>692</b>	<b>916</b>

Source-DES, M/A (\*IV advance Estimates)

### iii) 2015 (Kharif)

Area (000 ha)

S.N.	Crop	Target	Achieved
1.	Groundnut	120.00	92.86
2.	Sunflower	4.00	0.27
3.	Castor	9.00	7.206
4.	Sesamum	250.00	155.96
5.	Niger	90.00	56.11
6.	<b>Total Oilseeds</b>	<b>473.00</b>	<b>312.42</b>

Source- SDA- State Deptt. of Agri.

## 6. Financial Progress

### 6.1. Allocation & Expenditure: 2015-16

The Government of India, Ministry of Agriculture and Farmers Welfare, Department of Agriculture, Cooperation and Farmers Welfare accorded administrative approval for implementing National Mission on Oilseeds and Oil Palm (NMOOP) during 2015-16 with total Central Share allocation of Rs. 353.00 Crores vide Ministry's letter No. 14-1/2015-CA-II dated 15.04.2015.

The Oilseed Division, Ministry of Agriculture & Farmers Welfare, Government of India conveyed approval for Annual Action Plan of NMOOP for 2015-16 to Odisha State with total outlay of Rs. 1370.554 lakhs vide their letter No. 6-17/2015-AAP (Coord)/OS dated 14.5.2015. The details of allocation, release and expenditure is given below:

(Rs. in Lakh)

S. N.	Name of Scheme	Allocation			Release			Expenditure (upto Sept., 15)		
		CS	SS	Total	CS	SS	Total	CS	SS	Total
1	Mini mission I (Oilseeds)	230.0	230.0	460.0	115.0			27.85	27.85	55.70
2	Mini mission II (Oil Palm)	437.352	437.352	874.704						287.60
3	Mini mission III (TBOs)	17.92	17.92	35.85						
	<b>Total</b>	<b>685.277</b>	<b>685.277</b>	<b>1370.554</b>						<b>343.30</b>

CS- Central Share, SS- State share

*Details of physical and financial progress is at Annexure –I*

Details on status of State Level Standing Committee meeting, PMT, position of involvement of PRIs, targets and achievement under different components of scheme, soil health card, progress under micronutrient application, soil amelioration, farm implements, efficient water application tools, training etc. during current year are at **Annex-A**.

## 7. Details of field visit/ Activities

The team visited the districts of Bargarh, Subaranpur, Angul and Dhenkanal from 28-30<sup>th</sup> September, 2015. Brief details of activities visited are given below –

S.N.	District	Block	Village	Activities
1.	Bargarh	Paikmal	Mansil	Oil palm plantation 450 Plants, Area – 3 ha Subsidy Rs. 10.00 per plant, Total cost of sibling Rs. 27.00
		Paikmal	Darlipali	Groundnut Minikit, Variety TG-51, Total Minikits distributed – 50
		Padmapur	Marhapalli	Groundnut Minikit, Variety TG-51 Total Minikits distributed –150
		Bhatli	Sulsuli	Groundnut Minikit, Variety TG-51 Total Minikits distributed –125
2.	Subaranpur	Sonepur	Naikenpalli	Groundnut Minikit, Variety TG-51 Total Minikit – 150
			Bahirkhana	Seed Production of Pigeonpea Variety VL Arhar 1
				KVK, Sonepur, Dist.-Subaranpur (OUAUT, Bhubaneswar)
3.	Angul	Banarpal	Kurdul	GroundnutMinikit, Variety ICGV-91114 Total Minikits distributed –300
4.	Dhenkanal	Dhenkanal	ChauliaKhama rl	GroundnutMinikit, Variety ICGV-91114 Total Minikits distributed –200

8. List of improved recommended varieties is at **Annex-B.**

## 9. OBSERVATIONS/SUGGESTIONS

- 9.1. The State Department of Agriculture has signed MOU with Godrej Agro-vet under Oilpalm cultivation in district Bargarh for marketing of the FFBS.
- 9.2. The Oilpalm growers demand for increase the subsidy norms in Drip component. Continuous supply of Electricity is the problem, the farmers in that area, requested for solar system.
- 9.3. The Panchayat Raj Institutions (PRI)is being used for selection of the beneficiary under the scheme.
- 9.4. The State Department of Agriculture has registered the minikitsarea of the groundnut under seed production and all the seeds produced from these minikits will be procured by the department and the price has been fixed @Rs. 64.00 perkg seed.

- 9.5. The groundnut crop in minikitprograme faced moisture stress during pegging stage in Angul district. In some area intercropping with arhar has been taken up (6:1). The Farmers were satisfied with the performance of the variety and expecting 6-8 qtls per acre yield. The performance of variety TG-51 is better than ICGV – 91114 in the visited districts.
- 9.6. The weed *Celosia argentia* (Cocks Comb) is the major occurrence in groundnut fields whereas Aphids, Stem rot, Collar Rot are the major pests in the locality. The farmers have not followed the Seed treatment / inoculation. The farmers of Dhenkanal used weedicide Rapta (Oxydizonol), post emergence for control of *Celosia argentia*.
- 9.7. Un-availability of quality seeds of groundnut varieties, Gypsum, heavy infestation of Weeds, marketing problem (less remunerative price) etc. are the constraints due to which the farmers are diverting to other crops like cotton and other cash crops.
- 9.8. Labour is main constraints in Angul district due to industrial belt, promotion of farm machinery needing thrust in that area.
- 9.9. The farmers and Extension Officials demanded for short duration mustard variety (100 days).
- 9.10. The Odisha State Seeds Corporation (OSSC) / Odisha Agro Industries Corporation (OAIC) are engaged in the seed production and seed distribution in the state. Storage Godown is not available in sufficient quantity in visited districts.
- 9.11. Requirement of training to farmers for seed production, establishment of processing unit in the area etc. were some of the issues flagged by the Seed Certification Officer, Bargarh during meeting with stakeholders at Bargarh.
- 9.12. The Officials from Horticulture Department informed that the cultivation of olive under TBOs programme as approved in the Action Plan is not suitable in the state based on past experience under RKVY and requested to incorporate crops like Simarouba, Neem, Jojoba, Karanj and Mahua.
- 9.13. The seed production of Arhar variety (VLA rhar-1) in the village Bahirkhana, Block – Sonapur, district Subaranpur was visited by the Team. The seed production has been taken in an area of 7 ha, the crop was at flowering stage. The whole activity of seed production is undertaken by the farmer with the help of district officials of Department of Agriculture, Odisha.
- 9.14. The KVK, Sonapur district Subaranpur actively involved in conduction of FLDs, Training to farmers about modern agriculture technologies, organization of farmers fair, field days etc. The activities like Mushroom cultivation, poultry unit, Storage structure, vegetables plantation suitable for kitchen Garden etc. were visited by the Team.

- 9.15. Timely supply of Kharifminikit by end of May needs to be ensured. Establishment of dehumidified chambers for storing groundnut seed need to be initiated on priority basis.
- 9.16. A good tactics adopted by the State Department of Agriculture registering all the area under groundnut minikits under seed production during this Kharif and procured all the seed to make out shortage of quality seeds, may be followed whenever necessary.
- 9.17. Seed Treatment/inoculation with fungicide /liquid Bio-Fertiliser needs encouragement for the farmers under the scheme through ensuring its availability at the time of sowing.
- 9.18. Soybean cultivation in Bargarh district (adjoining areas to Chhattisgarh state) has potential, need to be harnessed.
- 9.19. The seed production of newly released varieties of groundnut and other oilseeds crops to meet out the demand of farmers by seed producing agencies in the state, need to be ensured.
- 9.20. Very few components progressed under MMI viz. Purchase of breeder seeds, distribution of certified seeds, farmers training and officer training were noticed in the progress report ending September. The State need to ensure the implementation of rest of the components in ensuing rabi season.

**1. No. of meetings of State level Standing Committee and Project Management Team at District Level**

The district wise /Scheme wise review through VDO Conference by the Principal Secretary to Govt./the Commissioner Cum Director of Agriculture in State level. In District level, DDAs are conducting monthly review in DAO/AAO conference.

**2. Details of Consultants / Technical Assistants working at State and District Levels and works assigned to them:**

No Consultants / Technical Assistants engaged under NMOOP(MM-I on Oilseeds)

**3. Degree of awareness among the field officials of State Department regarding various activities of NMOOP**

Well aware.

**4. Position of involvement of Panchayati Raj Institutions (PRIs) for selection of beneficiaries. Procedure adopted for involving Panchayati Raj Institutions in selection of beneficiaries and execution of Local Initiatives:**

- i) Mainly the PRI Members are involved for implementation of activities like Minikit distribution and Block Demonstration in clusters for identification of clusters and beneficiaries. The inputs are being distributed to the selected farmers.
- ii) The field personnel are informing to the farmers / PRI members time to time for availing inputs on subsidized sale under the scheme.
- iii) The field personnel are conducting the awareness meeting in identified clusters in presence of PRI members.

**5. Implementation of MM-I (Oilseeds):**

**5.1 :Production of Foundation / Certified seed:**

❖ **Criteria of selection of farmers/seed growers:** The farmers should have technical know-how for oilseed production, having irrigation facility to save the crop at critical period, agree with the terms & conditions of Seed Procuring Agencies of the State and should register the crop with OSSOPCA (Odisha State Seeds and Organic Products Certification Agency), Bhubaneswar

❖ **Criteria followed for disbursement of production subsidy:**

1. The Seed producing agencies (OSSC/OAIC) submitted seed subsidy bills (Both farmers share & Agency Share) along with Tag Certificate to the Scheme Officer of the Directorate.
2. The bills were passed for payment by JDA(SP&C) and Administrative approval accorded by the Commissioner cum Director of Agriculture & Food Production, Odisha.
3. The farmers availed their subsidy claim through Agencies.



❖ **Crop and Variety wise area covered under foundation seed production.**

SI No	Crop	Variety	Area covered in Ha
1	Groundnut	TG-37A	150.00
		ICGV-91114	206.20
		Kadiri-6	48.50
		Kadiri-9	11.80
		TAG-24	10.00
		TG-38B	22.00
		TG-51	2.00
		GPBD-4	74.00
		<b>Total</b>	

NB- No other Kharif oilseeds taken under seed production.

❖ **Crop and Variety wise area covered under certified seed production.**

SI No	Crop	Variety	Area covered in Ha
1	Groundnut	TG-37A	163.00
		ICGV-91114	818.80
		Kadiri-6	417.20
		Kadiri-9	22.00
		TAG-24	109.00
		TG-38B	95.00
		TG-51	208.74
		GPBD-4	66.00
		Smruti	257.00
	<b>Total</b>		<b>2156.74</b>

NB- No other Kharif oilseeds taken under seed production.

❖ **Crop and Variety wise expected production of foundation/ certified seed.**

SI No	Crop	Variety	Expected Production of seeds in Qtl	
			Foundation Seeds	Certified Seeds
1	Groundnut	TG-37A	750.00	815.00
		ICGV-91114	1031.00	4094.00
		Kadiri-6	242.50	2086.00
		Kadiri-9	59.00	110.00
		TAG-24	50.00	545.00
		TG-38B	110.00	475.00
		TG-51	10.00	1043.70
		GPBD-4	370.00	330.00
		Smruti	0	1285.00
	<b>Total</b>		<b>2622.50</b>	<b>10783.70</b>

NB- No other Kharif oilseeds taken under seed production.

❖ **Crop and Variety wise targets and achievement under supply of certified seeds during the season (Kharif-2015)**  
(Fig in Qtl)

Sl No	Crop	Variety	Target	Achievement
1	Groundnut	ICGV-91114		1046.40
		TG-37A		245.10
		K-6		406.30
		TG-51		302.00
		TG-38		191.10
		Smruti		385.50
		GPBD-4		285.90
		<b>Total</b>		

❖ **Crop / Variety wise number of minikits received along with date of receipt:-**  
Season: Kharif 2015.

Sl No	Crop	Variety	No' of Minikits Alloted	No' of Minikits received	Supplying Agency
1	Groundnut	TG-51	6000	2081	NSC
		Kadiri-6	1000	169	NSC
		ICGV-91114	1000	1000	HIL
	<b>Total</b>		<b>8000</b>	<b>3250</b>	

NB-Minikits have been received within 25.5.15 to 12.6.15

Season : Rabi 2015-16.

Sl No	Crop	Variety	No' of Minikits Alloted	No' of Minikits received	Supplying Agency
1	Groundnut	Kadiri-6	7500		HIL
		ICGV-91114	5000		HIL
2	Mustard	JD-6	10000		NSC
3	Sunflower	DRSF-113	1363		NSC
	<b>Total</b>		<b>11363</b>		

**5.2 : Demonstration of Improved Package of Practices including :**

❖ **Criteria of selection of farmers**

The farmer should come under the selected cluster area, have irrigation facility for application during critical stages of crop, and interested to adopt latest production technology of Oilseed crop.

❖ **Details of inputs distributed under demonstrations crop-wise :**

**Kharif- 2015** :No demonstration programme during the season.

**Rabi- 2015-16** :Proposed programme of **2004 ha of Block demonstration on Mustard** to be conducted in clusters of 50 ha each.

For Mustard demonstration there is provision of inputs to be distributed to farmers per ha with cost structure of Rs.3000/- towards scheme share as follows:

- 1- Certified seed-10kg; 2- Fertilizer (a) Urea- 75 kg, (b) SSP- 50 kg; 3- Micronutrient (a) Boron – 10.5%- 10kg ; 4- Need based spraying (a) Insecticide – with tentative cost of Rs.600/-.

As per **approved AAP for additional area coverage** under oilseeds during Rabi/Summer-2015-16, proposed programme of Block demonstration:

- Sunflower:- 1000 ha, Sesamum:- 500 ha.

❖ **Mechanism for supply of inputs.**

As per the indent of inputs (except seed) placed by the DDAs of concerned districts through online input management, the OAIC Ltd. is to supply in destination points at block level. The certified seeds are to be supplied by OSSC/OAIC as per indent.

❖ **Size of cluster demonstrations adopted.**

- 50 ha contiguous cluster area.

❖ **Distribution of publicity material.**

Different leaf lets/booklets in odia language on development of oilseed crops are being prepared by JDA(Information) of Directorate of Agriculture for distribution to the farmers as follows :

1. BaigyanikpadhatireTailabeejjatiyafasalchasa (Cultivation of oilseed crops in scientific method)
2. Chinabadamfasalaresamanyitarogapakaparichalana (Integrated pest management in groundnut crop).
3. Sorisafasalaresamanyitarogapakaparichalana (Integrated pest management in mustard crop).

❖ **Monitoring mechanism of demonstrations-Farmer's Feedback?**

1. At state level Principal Secretary to Govt. Agriculture Department, Commissioner cum Director of Agriculture, Additional Director of Agriculture, JDA (SP & C), DDA (Extension) & APO (Oilseeds).
2. At district level DDA, DAO, SMS, Scheme Officers.

❖ **Roles and responsibilities of different actors involved in the conduct and monitoring these demonstrations.**

- 1- After obtaining the programme, the DDAs of concerned districts intimate the targets of demonstration to the AAOs( in-charge of block) .
- 2- The AAOs with assistance of GP level staffs select the clusters and beneficiaries by involving PRI members.
- 3- As per approved cost structures of the demonstration, the DDAs place indent to OSSC/OAIC for supply of inputs at block level.
- 4- Soon after receipt of inputs the concerned AAOs/AO/VAW distribute to the selected beneficiaries.
- 5- The concerned extension personnel of the cluster area and officers from district advise the beneficiaries regarding package of practices, INM,IPM etc for increasing production from time to time during growth period of the crop.

❖ **Suggestions for improvement.**

- 1.Timely release of fund (both CS & SS)
- 2.Enhancement of CS provision to cover more area under demonstration of oilseed crops.
- 3-Ensuring timely supply of inputs.
- 4-Timely supply of minikits by seed agencies as per GOI allocation.

### 5.3 : Position of Micronutrients:

#### ❖ Targets and Achievements

During 2015-16, no target under Supply of Micronutrients.

#### ❖ Status of soil health Card

The progress of soil health cards in the state is as follows:-

- Number of Soil samples collected : 81070
- Number of Soil samples received in labs : 77787
- Number of Soil samples analyzed : 54324
- Number of Soil Health Card issued : 40917

#### ❖ Mechanisms adopted for procurement of micro nutrients.

As per the indent of Micronutrients placed by the DDAs of concerned districts through online input management, the OAIC Ltd supply to destination points at block level.

#### ❖ Type of micro nutrients applied (singles/mixed)

Both single & mixed micronutrients are applying by the farmers.

#### ❖ Percent (%) increase of inputs compared to last year.

Not included in AAP of last year & current year.

### 5.4 : Soil Amelioration-gypsum/lime.

#### ❖ Targets and Achievements

Action Plan (2015-16)	Soil Ameliorant	Target (ha)	Achievement	Remarks
Regular	Gypsum	2000	-	The material cost & Transportation cost has been finalized by Tender process. The distribution of Gypsum will be started from October-15 onwards.
Additional	Gypsum	1200	-	
<b>Total</b>		<b>3200</b>		

#### ❖ Requirement / availability of soil Ameliorant.

Sufficient stock of Gypsum is available with Paradeep Phosphates Ltd. (PPL) at Paradeep of Jagatsingpur district of Odisha.

#### ❖ Percent (%) increase of inputs compared to last year.

72% increase of Gypsum compared to last year (Target of last year-1854 ha)

### 5.5 : Farm Implements/Machineries distribution:

❖ **Targets and Achievements**

Farm Implements	Target	Achievement	Remarks
Manual	212 No's (Fin-Rs 17.00 lakh)	-	Manual Groundnut decorticator, four row drum seeder, Multi crop thresher cum fan type winnower, Pedal G.nut thresher, Sunflower threshing bench and other manual/bullock drawn farm implements are to be distributed on subsidy to the oilseed growers.

❖ **Individual / Community based operation of machines**

Individual based .

❖ **Area covered by each machine / implements including seed treating drum.**

Data presently not available.

**5.6 :Irrigation appliances**

❖ **Targets and Achievements of sprinkler sets and water carrying pipes.**

Irrigation appliances	Target	Achievement
Sprinkler set	1000 ha	-

❖ **Area coverage with pumpset / water carrying pipes.**

-

❖ **Comparison of irrigation by sprinkler set / mobile rain gun and conventional method of irrigation.**

Yet to be assessed for oilseeds crops.

**5.7 : Plant Protection chemicals :**

❖ **Targets and Achievements**

As per AAP	PP Chemical	Target	Achievement
AAP 2015-16	Insecticides	2000 ha	-
Addl AAP-15-16	Insecticides	3000 ha	-
<b>Total</b>		<b>5000 ha</b>	-

❖ **Weed infestation status.**

During Kharif weed infestation is more problematic, farmers are preferring manual inter cultural operation for weed control and better pegging in ground nut.

❖ **Pests and diseases status**

Area affected in oilseed crops by pests like Jassids, Aphids, White fly, leaf minor, Leaf eating caterpillar and diseases like tikka in G.Nut, wilt :-

Area with Moderate intensity – 42 ha; Area with Low intensity - 105 ha; Area treated : 85 ha

❖ **Method of IPM adopted:-**

Mechanical, manual, biological, cultural, chemical and biochemical methods are used.

**5.8 : Bio-fertilizers.**

❖ **Name of bio-fertilizers used.**

Rhizobium Culture, Azotobactor & PSB

❖ **Capacity building of farmers on application of bio-fertilizers.**

The farmers are being trained practically about application of bio-fertilizers by the field functionaries and in the farmers training.

❖ **Crop wise area covered under bio-fertilizer.**

Groundnut :- About 7000 ha

**5.9 : Training of Extension Officers/Workers/Input dealers :**

❖ **Method of selection of Extension Workers / input dealers.**

Preference is given to extension workers/Officers working in Oilseed potential area and the input dealers having good transaction for selling inputs for oilseed crops.

❖ **Name of the institution / Technical experts hired.**

1. Scientists from KVK / RRTTS

2. Professor / Asst. Professor from OUAT

3. Agronomist/PPO/FMS/WMS/AAO(PS) from department.

❖ **Linkage of training with experimental plot.**

One period of the 2-days training scheduled for field visit.

❖ **Course Curriculum.**

The following courses are to be covered under 2 days training:-

**1st day:-**

1. Pre-evaluation
2. Importance of oilseeds in Odisha, production constraints and policy approach & interventions to increase oilseed production.
3. Major oilseed crops such as Groundnut & Mustard, varieties, seed production, processing and distribution in Odisha.
4. Major oilseed crops such as Sunflower & Sesamum, varieties, seed production, processing & distribution in Odisha.
5. Agronomic package & practices for Oilseed crops such as Sunflower, Sesamum & Oilpalm.

**2<sup>nd</sup> day:-**

1. Agronomic package & practices for Oilseed crops such as Groundnut & Mustard.
2. Integrated Nutrient Management (INM) for major oilseed crops in Odisha.
3. Integrated Disease & pest Management (IDM & IPM) in major oilseed crops in Odisha.
4. Post harvest technologies (drying, storage, oil extraction & refining) and value addition in Oilseed crops.
5. Field visit & Post Evaluation.

❖ **Roles and Responsibilities of different stake holders**

1. Intimate the participants sufficient before training period for ensuring full attendance.
2. Contact the resource personnel for confirmation for delivering their talk in the training as per topic.
3. Timely arrangement of training materials.
4. Care to be taken for smooth management of training by participatory method and suggestions given by participants.

#### **5.10: Training of Farmers:**

##### **❖ Method of selection of farmers.**

Preference given to the farmers growing oilseeds and interested to adopt new technologies and key farmers those are sharing their innovative ideas for cultivation with others.

##### **❖ Source of Technical experts**

1. Scientists from KVK / RRTTS
2. Agronomist/PPO/FMS/WMS/AAO(PS) from department.

##### **❖ Linkage of training with demonstration site.3**

One period of the 2-days training scheduled for field visit.

##### **❖ Course Curriculum**

###### **1<sup>st</sup> day:-**

- 1- Impact of changing climate on yield & quality of Oilseed crops.
- 2- **Influence** of Integrated Nutrient Management (INM) on Oilseed crops.
- 3- Seed Production techniques for quality seed production in oilseed crops with varietal characteristics.
- 4- Production of Oilseed crops through improved Cultural practices.

###### **2<sup>nd</sup> day:-**

- 1- Effect of pesticide application on Oilseed crops and Integrated Pest Management (IPM) practices.
- 2- Constraints, scope and strategy for boosting Oil seed Production in the district through Innovative Techniques.
- 3- Disease Management in Oilseed crops.
- 4- Interventions through NMOOP for improving production and productivity of Oilseed crops.

##### **❖ Roles and Responsibilities of different stake holders**

1. Intimate the participants sufficient before training period for ensuring full attendance.
2. Contact the resource personnel for confirmation for delivering their talk in the training as per topic.
3. Timely arrangement of training materials.
4. Care to be taken for smooth management of training by participatory method and suggestions given by participants.



Oilpalm plantation (village- Mansil, Block- Paikmal, district- Bargarh)



Interaction with beneficiaries of Gr.nutMinikit TG 51 (Village Darlipali, Block Paikmal, district- Bargarh)





Groundnut Minikit variety TG 51(village- Sulsuli, Block- Bhatli, district- Bargarh)



Groundnut + Arhar intercropping ((village- Kurdul, Block- Banarpal, district- Angul)



Groundnut Minikit ICGV-91114 ((village- Kurdul, Block- Banarpal, district- Angul)



Groundnut Minikit variety TG 51(village- Naikenpalli, Block- Sonapur, district- Subaranpur)

## Improved varieties of Oilseeds

## 1. Groundnut

Variety	Year of release	Releasing centre	Yield Potential (Kg/ha)	Oil content (%)	Recommended for (state/region)	Specific features
TG 38B (TG 38)	2006	BARC, Mumbai	2768	48	Orissa, West Bengal and north eastern states	Tolerant to stem rot; suitable for <i>rabi</i> -summer season
Vasundhara (Dh 101)	2007	UAS, Dharwad	2877	50	West Bengal, Orissa, Jharkhand and Assam	Tolerant to stem rot and PBNB; tolerant to <i>thrips</i> and <i>Spodoptera</i> ; suitable for <i>rabi</i> -summer season
TG 51	2008	BARC, Mumbai	2675	49	West Bengal, Orissa, Jharkhand	Tolerant to stem rot and root rot; suitable for <i>rabi</i> -summer season.
Vijetha (R 2001-2)	2010	UAS, Raichur	1600	47	Orissa	Resistant to PBNB; recommended for <i>rabi</i> -summer season
Girnar 3 (PBS 12160)	2010	DGR, Junagadh	1520	45	West Bengal, Orissa, Manipur	Tolerant to leaf miner and thrips; recommended for <i>kharif</i> season

## 2. Castor

Variety	Year of release	Releasing Centre	Yield potential (kg/ha)	Oil content (%)	Recommended states/regions situations	Salient features/ traits
Jwala (48-1)	2007	DOR, Hyderabad	1000 (R) 1800 (I)	50	All castor growing areas under both rainfed and irrigated	Resistant to <i>Fusarium</i> wilt; tolerant to <i>Botrytis</i> , salinity
DCS-107	2010	DOR Hyderabad	1762	46	Identified for both rainfed and irrigated areas of the country	Resistant to wilt
<b>Hybrid</b>						
DCH-519	2006	DOR Hyderabad	1500 (R) 2200 (I)	49	Both rainfed and irrigated castor growing areas of the country	Green, triple bloom, resistant to <i>Fusarium</i> wilt, Resistant to Jassids

## 3. Sesame

Variety	Year of release	Releasing centre	Oil content (%)	Average Yield (kg/ha)	Recommended states	Specific features
Nirmala (OS-Sel-164)	2003	OUAT, Bhubaneswar (Orissa)	42-45	650-700	<i>Kharif</i> , <i>rabi</i> Orissa	Duration 84-88 days, White seed, Tol. to wilt, Res. to bacterial leaf spot, powdery mildew, Mod.res. to stem/root rot, <i>Alternaria</i> leaf spot.
Prachi (ORM 17)	2004	OUAT, Bhubaneswar	42-45	700-750	<i>kharif</i> , <i>rabi</i> , Orissa	Duration 85-90 days, Black seed, Moderately resistant to <i>Macrophomina</i> stem/root rot, phyllody
Smarak (OSC 560)	2015				Orissa	
Subhra (QSC 207)	2015				Orissa	

#### 4. Linseed

Variety	Year of release	Releasing centre	Oil content (%)	Average Yield (kg/ha)	Recommended states	Specific features
Suyog (SLS -27)	2004	JNKV, Sagar	41.43	1509 (I)	Rajasthan.,U.P.,M.P., Maharastra,CG, Orissa,A.P. &Kernataka.	Medium in height, white flower, light brown seeded, moderately resistant to rust, PM and BF.
Indira Alsi-32 (RLL 81)	2005	IGKV, Raipur	39.18	780 (R)	CG,MS,Karnataka & Orissa	Dwarf in height, blue flower, dark brown seeded, res. to PM.
Sharda (LMS-4-27)	2006	CSAU, Kanpur	41.32	762 (R)	CG,Maharastra,Karnat aka, Andhra Pradesh & Orissa	Dwarf, early duration, white flower, brown seeded, mod. resistant to wilt, PM & BF
MAU Azad Alsi 2	2011	CSAUT, Kanpur			CG,Maharastra,Karnat aka, Orissa	Early to medium duration variety

#### 5. Niger

Variety	Year of release	Releasing centre	Oil content (%)	Average Yield (kg/ha)	Recommended states	Specific features
Birsa Niger-2 (BNS-9)	2005	BAU, Ranchi (Jharkhand)	35-38	600-650	All niger growing states	Duration 95-100 days, Black seed
BNS-10 (Birsa Niger-1)	2008	BAU, Ranchi (Jharkhand)	36-38	650-700	All niger growing states	Duration 95-100 days, Shining black seed,
Birsa Niger 3 (BNS 11)	2010	BAU, Ranchi (Jharkhand)		581	Jha, CG, MP, Odish, MS, KN, AP, WB	97-98 days
Utkal Niger-150 (ONS 150)	2011	RRTTS, OUA&T, Semiliguda (Orissa)	38-40	650-700	Orissa	Duration 105-110 days, Black seed, Tolerant to <i>Alternaria</i> , <i>Cercospora</i> , <i>cuscuta</i>

#### 6. Rapeseed-Mustard

Variety	Year of release	Releasing centre	Oil content (%)	Average Yield (kg/ha)	Recommended states	Specific features
Parbati-I (ORT 2-4)	2002	OUA&T, Bhubaneswar	42	1380	Orissa	For rainfed areas
Anuradha (ORT 6-2)	2003	OUA&T, Bhubaneswar	44	1460	Orissa	For rainfed areas
PusaMahak (JD-6)	2005	IARI, New Delhi	39-44	597-1049	Orissa, WB, Bihar, Jhar., Chhattisgarh, Assam	An early maturing, for rainfed areas
44 S 01	2012		37-43	1109-1429	West Bengal, Bihar, Odisha, NEH region	Early maturity rainfed conditions