

DRIVING OILSEED CROP PRODUCTIVITY IN NORTH INDIA THROUGH CLUSTER FRONTLINE DEMONSTRATIONS



ANNUAL REPORT (2023-24)
CFLDs ON OILSEEDS



**ICAR-AGRICULTURAL TECHNOLOGY APPLICATION RESEARCH INSTITUTE
ZONE-I, PAU CAMPUS, LUDHIANA-141 004, PUNJAB**



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Sponsored by



**Department of Agriculture & Farmers Welfare
(DA&FW) under National Food Security Mission-Oilseeds**



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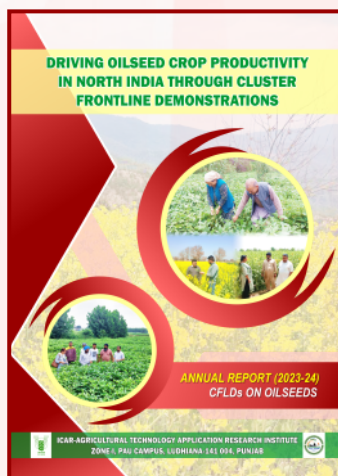
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**Graphics Design &
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Funded by:

**Department of
Agriculture,
Cooperation & Farmer's
Welfare (DoAC&FW)**



Driving Oilseed Crop Productivity in North India through Cluster Frontline Demonstrations

Citation:

Mamgai P., Singh T., Kaur D, Yadav S.A. and Sheoran P. (2024). Driving Oilseed Crop Productivity in North India through Cluster Frontline Demonstrations. ICAR-Agricultural Technology Application Research Institute Zone-I, Ludhiana, Punjab Pages 60.

ICAR-ATARI-1 PME Ref. No.:

ATARI-1/Proceedings-Workshop/2024/27

Published by:

Director

ICAR-Agricultural Technology Application Research Institute, Zone-I

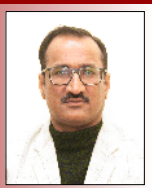
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PREFACE



डॉ. परवेन्दर श्योराण
(निदेशक)

Dr. Parvender Sheoran
Director



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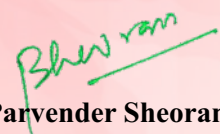
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The cultivation of oilseeds is a cornerstone of India's agricultural economy, providing millions of farmers with their primary source of livelihood. It plays a crucial role in rural employment and income generation. To boost oilseed production, the government, alongside various agricultural agencies, has introduced several policies and initiatives aimed at expanding the cultivation area and improving yields. In 2023-24, India achieved a remarkable oilseed production milestone, reaching 410.0 lakh tonnes—an increase of 30.3 lakh tonnes from the previous year.

The Department of Agriculture and Farmer's Welfare (DA&FW) has been at the forefront to increase the area and production of oilseeds in India. As part of the initiative, under the National Food Security Mission (NFSM) (currently known as 'Krishionnati Yojna'), project "Cluster Frontline Demonstrations (CFLDs) on Oilseeds" was sanctioned for the year 2023-24. This initiative aimed to supply farmers with high-quality seeds of improved varieties, along with dissemination of advanced cultivation practices developed by State Agricultural Universities (SAUs) and ICAR Institutes. A total amount of ₹ 96.77 lakh was allocated to ICAR-ATARI Zone-I, Ludhiana to conduct 3775 CFLDs over an area of 1510 hectares. These CFLDs were carried out by 53 Krishi Vigyan Kendras (KVKs), comprising 21 from Punjab, 9 from Himachal Pradesh, 10 from Uttarakhand, and 13 from Jammu & Kashmir.

I am sincerely thankful to the DA&FW for funding this project. I extend my gratitude to Dr. U.S. Gautam Deputy Director General (Agricultural Extension) and Dr. R.K. Singh, Assistant Director General (Agricultural Extension), for their invaluable guidance and support in the project's successful implementation.

My heartfelt appreciation also goes to the Directors of Extension Education (DEEs) at State Agricultural Universities, the Directors of ICAR Institutes and the Programme Coordinators of KVKs for their essential role in ensuring the seamless execution of the project. Most importantly, I express my deepest gratitude to the farmers whose active participation in the Cluster Frontline Demonstrations was instrumental in achieving the project's objectives. Congratulations to all stakeholders involved for their exemplary contributions to the success of this initiative.


(Parvender Sheoran)

EXECUTIVE SUMMARY

कार्यकारी सारांश

Oilseeds are a vital source of cooking oil, a staple in Indian households, and improving oilseed cultivation is key to ensuring a stable domestic supply of edible oils, thus enhancing food security across the country. Additionally, oilseed farming plays a significant role in generating income for farmers and supporting rural economies. To boost the area, production, and yield of oilseeds in India, the Department of Agriculture & Farmer's Welfare (DA&FW), in collaboration with the Division of Extension Education, ICAR, New Delhi, launched the Cluster Frontline Demonstrations on Oilseeds project in 2015-16 under the National Food Security Mission (Currently Krishionnati Yojna). This initiative continued into 2023-24 with the goal of demonstrating new crop production and protection technologies, along with best management practices, on farmers' fields across various agro-climatic regions and farming conditions. The project is being implemented by 11 ICAR-ATARIs through Krishi Vigyan Kendras (KVKs) in different zones.

For the year 2023-24, ICAR-ATARI Zone-I, Ludhiana, was allocated a budget of ₹ 96.77 lakh to conduct 3,775 Cluster Frontline

तिलहन खाना पकाने के तेल का एक महत्वपूर्ण स्रोत है, जो भारतीय घरों में मुख्य है, और तिलहन की खेती में सुधार खाद्य तेलों की स्थिर धरेलू आपूर्ति सुनिश्चित करने के लिए महत्वपूर्ण है, जिससे पूरे देश में खाद्य सुरक्षा बढ़ेगी। इसके अतिरिक्त, तिलहन खेती किसानों के लिए आय पैदा करने और ग्रामीण अर्थव्यवस्था को समर्थन देने में महत्वपूर्ण भूमिका निभाती है। भारत में तिलहनों के क्षेत्र, उत्पादन और उपज को बढ़ावा देने के लिए, कृषि और किसान कल्याण विभाग (डीए एंड एफडब्ल्यू) ने विस्तार शिक्षा प्रभाग, आईसीएआर, नई दिल्ली के सहयोग से 2015 में तिलहन परियोजना पर वलस्टर फ्रंटलाइन प्रदर्शन शुरू किया। 16 राष्ट्रीय खाद्य सुरक्षा मिशन (वर्तमान में कृषि उन्नति योजना) के अंतर्गत विभिन्न कृषि-जलवायु क्षेत्रों और खेती की स्थितियों में किसानों के खेतों पर सर्वोत्तम प्रबंधन प्रथाओं के साथ-साथ नई फसल उत्पादन और सुरक्षा प्रौद्योगिकियों का प्रदर्शन करने के लक्ष्य के साथ यह पहल 2023-24 तक जारी रही। यह परियोजना 11 आईसीएआर-अटारी द्वारा विभिन्न क्षेत्रों में कृषि विज्ञान केंद्रों (केवीके) के माध्यम से कार्यान्वित की जा रही है।

2023-24 वर्ष के लिए, आईसीएआर-अटारी जोन- I, लुधियाना को ₹ 96.77 लाख का बजट आवंटित किया गया। इस परियोजना में 53 कृषि विज्ञान केंद्र (KVK)

Demonstrations (CFLDs) on oilseeds across 1,510 ha. The project involved 53 Krishi Vigyan Kendras (KVKs), including 21 from Punjab, 9 from Himachal Pradesh, 10 from Uttarakhand, and 13 from Jammu & Kashmir. The budget allocation per hectare was ₹ 7,500 for soybean and ₹ 5,000 for sesame during the Kharif season, and ₹ 6,000 for Rapeseed Mustard and ₹ 5,000 for linseed during the Rabi season. Additionally, provisions were made to hire a Senior Research Fellow (₹ 31,000/month) and a Data Entry Operator (₹ 25,000/month) for smooth implementation of the project.

During the Kharif season, 653 CFLDs were conducted over 140 ha for sesame, and 151 demonstrations were carried out on 30 ha for soybean. In the Rabi season, 3,896 CFLDs were conducted on 970.9 ha for Rapeseed Mustard, and 34 demonstrations were held on 9.2 ha for linseed. In total, 4,734 CFLDs were successfully conducted across 1,150.1 ha in 2023-24, covering various oilseed crops throughout Zone-I states.

During the Rabi and Kharif season of 2023-24, a total of 287 various extension activities were conducted by the KVKs of Punjab, Himachal Pradesh, Uttarakhand and Jammu & Kashmir under the project. A total of 9,550 farmers participated in various extension programs viz. field days, awareness camps, kisan goshtis, field visits and training programs.

शामिल थे, जिनमें पंजाब से 21, हिमाचल प्रदेश से 9, उत्तराखंड से 10 और जम्मू-कश्मीर से 13 शामिल थे। प्रति हेक्टेयर बजट आवंटन सोयाबीन के लिए ₹ 7,500, खरीफ़ सीज़न के दौरान तिल के लिए ₹ 5,000, रेपसीड और सरसों के लिए ₹ 6,000, रबी सीज़न के दौरान अलसी के लिए ₹ 5,000 इसके अतिरिक्त, परियोजना के सुचारु कार्यान्वयन के लिए एक वरिष्ठ रिसर्च फेलो (31,000 रुपये प्रति माह) और एक डेटा एंट्री ऑपरेटर (25,000 रुपये प्रति माह) को नियुक्त करने का प्रावधान किया गया था।

खरीफ़ सीज़न के दौरान, तिल के लिए 140 हेक्टेयर में 653 सीएफएलडी आयोजित किए गए, और सोयाबीन के लिए 30 हेक्टेयर में 151 प्रदर्शन किए गए। रबी सीज़न में, रेपसीड और सरसों के लिए 970.9 हेक्टेयर पर 3,896 सीएफएलडी आयोजित किए गए, और अलसी के लिए 9.2 हेक्टेयर पर 34 प्रदर्शन आयोजित किए गए। कुल मिलाकर, 2023-24 में 1,150.1 हेक्टेयर में 4,734 सीएफएलडी सफलतापूर्वक आयोजित किए गए, जिसमें पूरे जोन-1 राज्यों में विभिन्न तिलहन फसलों को शामिल किया गया।

2023-24 के रबी और खरीफ़ सीज़न के दौरान, परियोजना के तहत पंजाब, हिमाचल प्रदेश, उत्तराखंड और जम्मू और कश्मीर के केवीके द्वारा कुल 287 विभिन्न विस्तार गतिविधियाँ आयोजित की गईं। विभिन्न विस्तार कार्यक्रमों जैसे क्षेत्र दिवस, जागरूकता शिविर, किसान गोष्ठी, क्षेत्र दौरे और प्रशिक्षण कार्यक्रम में कुल 9,५५० किसानों ने भाग लिया।

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ACRONYMS

ATARI	Agricultural Technology Application Research Institute
CFLDs	Cluster Frontline Demonstrations
CSKHPKV	Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya
DA&FW	Department of Agriculture and Farmer's Welfare
FAW	Fall Armyworm
GADVASU	Guru Angad Dev Veterinary and Animal Science University
ICAR	Indian Council of Agricultural Research
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
KVKs	Krishi Vigyan Kendra
NFSM	National Food Security Mission
PAU	Punjab Agricultural University
PC	Programme Coordinator
SAU	State Agricultural University
SKUAST	Sher-e-Kashmir University of Agricultural Sciences and Technology
SMS	Subject Matter Specialist
SRF	Senior Research Fellow
ST	Seed Treatment
WHO	World Health Organization
YSPUH&F	Dr. Yashwant Singh Parmar University of Horticulture and Forestry

INTRODUCTION

Oilseeds play a pivotal role in global agriculture, serving as an essential component in the production of edible oils, animal feed and industrial products. From cooking oils to biofuels, oilseeds bridge the gap between agriculture and industry, contributing significantly to food security, economic development and sustainable growth. Their impact is seen not only in culinary traditions but also in industrial advancements. As such, oilseeds are integral to both daily life and the broader economy, globally and locally. In India, oilseeds represent a cornerstone of agricultural activity, deeply intertwined with the country's food security, economic growth and socio-economic well-being. The nation is one of the world's largest producers and consumers of oilseeds, reflecting its rich cultural heritage and diverse agro-climatic conditions that favor the cultivation of a wide array of oilseed crops. With India being the fourth-largest oilseeds producer globally, the country accounts for 20.8% of the total global area under oilseed cultivation, contributing to 10% of world's production.

India's oilseed industry is distinguished by the variety of crops it produces, spanning nine annual oilseed crops. Among these are seven edible oilseeds (groundnut, Rapeseed Mustard, soybean, sunflower, sesame, safflower and niger) along with two non-edible oilseeds (castor and linseed). These crops are vital to meeting the domestic demand for edible oils, which are fundamental to Indian cuisine and everyday cooking. Additionally, oilseeds provide protein-rich meals for livestock feed, further supporting key agricultural sectors like dairy and poultry.

However, despite India's potential as a major oilseed producer, the sector faces several challenges. Issues such as fluctuating productivity, yield gaps, post-harvest losses and market volatility have hindered the industry's full potential. A significant portion of oilseed cultivation nearly 72% is rain fed and largely managed by small farmers, resulting in lower productivity due to limited access to irrigation and other essential resources. Furthermore, the lack of high-yielding, climate-resilient varieties of oilseeds has also impeded productivity levels, leaving India heavily dependent on edible oil



imports. Recognizing the critical role of oilseeds in national food security and the need to reduce import dependency, the Indian government has taken several steps to boost domestic oilseed production. Initiatives such as the 'Cluster Frontline Demonstrations on Oilseeds' under the National Food Security Mission (NFSM), launched in 2015-16 by the Ministry of Agriculture and Farmers Welfare, aim to enhance productivity and encourage farmers to grow more oilseeds. These efforts have shown promise, with the production of oilseeds in India increasing over the past five years due to combined efforts by both the government and private sector. While challenges remain, the ongoing investment in research and development, crop diversification and market interventions signal a hopeful future for India's oilseed sector. By empowering smallholder farmers and improving access to modern agricultural inputs, India is poised to further strengthen its domestic oilseed production, enhancing food security and reducing its reliance on imports. The details of area, production and yield of major oilseeds from 2016-17 to 2020-21 are given in Table 1.

Table 1: Area, Production and Productivity of major oilseed crops from 2018-19 to 2022-23

Crop	Particulars	2018-19	2019-20	2020-21	2021-22	2022-23
Sesame	Area (m ha)	1.42	1.62	1.72	1.63	1.52
	Production (m ton)	0.69	0.66	0.82	0.79	0.80
	Productivity (q/ha)	4.85	4.05	4.74	4.85	5.27
Soybean	Area (m ha)	11.1	12.2	12.9	12.2	13.1
	Production (m ton)	13.3	11.2	12.6	13.7	15.0
	Productivity (q/ha)	11.9	9.2	9.76	10.7	11.5
Groundnut	Area (m ha)	4.7	4.8	6.0	5.7	5.0
	Production (m ton)	6.7	9.9	10.2	10.1	10.3
	Productivity (q/ha)	14.2	20.6	17.0	17.8	20.8
Linseed	Area (m ha)	0.17	0.18	0.17	0.19	0.24
	Production (m ton)	0.10	0.12	0.11	0.12	0.17
	Productivity (q/ha)	5.74	6.71	6.37	6.42	6.98
Rapeseed Mustard	Area (m ha)	6.1	6.9	6.7	8.0	8.8
	Production (m ton)	9.3	9.1	10.2	12.0	12.6
	Productivity (q/ha)	15.1	13.3	15.2	15.0	14.3

Source: Indiatat.com



To boost the indigenous production of oilseeds in India, "Cluster Frontline Demonstrations (CFLDs) on Oilseeds" project was initiated by the Department of Agriculture and Farmer's Welfare (DA&FW) with cooperation of Division of Agricultural Extension, ICAR, New Delhi in the year 2015-16. Currently the NFSM has been merged in 'Krishionnati Yojana' and the project is funded under the new scheme. The project is implemented by ICAR-Agricultural Technology Application Research Institutes (ATARIs) through Krishi Vigyan Kendras (KVKs).

'CFLDs on Oilseeds' project was implemented with the following key objectives:

1. To demonstrate improved high yielding varieties in the farmer's field
2. To increase the area, production and yield of oilseeds to satisfy the demand of nations 'edible oils and encourage the crop diversification in agriculture
3. To demonstrate newly released crop production and protection technologies (IPM, INM etc.) and management practices in the farmer's field under different agro-climatic conditions and farming situations.

The project was implemented through ATARIs across India, focusing on disseminating the latest production technologies and highlighting the production potential of newly released oilseed varieties. These varieties, recommended by ICAR Institutes and State Agricultural Universities (SAUs), were aimed at increasing oilseed production and productivity while enhancing farmers' income.

For the year 2023-24, a budget of ₹ 96.77 lakh was allocated to ICAR-ATARI Zone-I, Ludhiana to conduct 3775 CFLDs on oilseeds over an area of 1510 ha. The project involved 53 KVKs, including 21 KVKs from Punjab, 9 from Himachal Pradesh, 10 from Uttarakhand and 13 from Jammu & Kashmir. To conduct the CFLDs during Kharif season on soybean ₹ 7500/ha and for sesame ₹ 5000/ha were allocated. Similarly, during Rabi season to conduct the CFLDs on Rapeseed Mustard ₹ 6000/ha and for linseed an amount of ₹ 5000/ha were allocated. Additionally, provision for hiring a Senior Research Fellow @ ₹ 31000/month and a Data Entry Operator (DEO) @ ₹ 25000/month for twelve months was included for the smooth execution of the project.

During the Kharif season of 2023-24, a total of 463 demonstrations were allocated to conduct on 185 ha area for sesame and soybean across the states of Zone- 1. Out of these,



Table 2: State-wise and crop wise details of allocated and conducted CFLDs on Oilseeds during Kharif & Rabi season 2023-24

State/Crop	Allocated		Conducted	
	Area (ha)	Demo (No.)	Area (ha)	Demo (No.)
Kharif Season				
Punjab				
Sesame	60	150	60	136
Soybean	10	25	10	25
Sub-Total (Punjab)	70	175	70	161
Himachal Pradesh				
Sesame	75	188	69	467
Soybean	20	50	20	126
Sub-Total (Himachal Pradesh)	95	238	89	593
Jammu & Kashmir				
Sesame	20	50	11	50
Sub-Total (Jammu & Kashmir)	20	50	11	50
Total Sesame	155	388	140	653
Total Soybean	30	75	30	151
Rabi Season				
Punjab				
Rapeseed Mustard	500	1250	448.4	1240
Sub-Total (Punjab)	500	1250	448.4	1240
Himachal Pradesh				
Linseed	20	50	4.2	14
Rapeseed Mustard	180	450	179.9	826
Sub-Total (Himachal Pradesh)	200	500	184.1	840
Uttarakhand				
Rapeseed Mustard	140	350	103	676
Sub-Total (Uttarakhand)	140	350	103	676
Jammu & Kashmir				
Rapeseed Mustard	270	675	239.6	1154
Linseed	5	13	5	20
Sub-Total (Jammu & Kashmir)	275	688	244.6	1174
Total Rapeseed Mustard	1090	2725	970.9	3896
Total Linseed	25	63	9.2	34
Total (Kharif Season)	185	463	170	804
Total (Rabi Season)	1115	2788	980.1	3930
Total (Kharif & Rabi Season)	1300	3251	1150.1	4734



KHARIF OILSEEDS

During the Kharif season of 2023-24, Krishi Vigyan Kendras (KVKs) of ICAR-ATARI, Zone-I conducted cluster frontline demonstrations (CFLDs) on sesame and soybean crops across the states Punjab, Himachal Pradesh, and Jammu & Kashmir. In Punjab, KVK Hoshiarpur conducted 25 demonstrations on 10 ha on soybean and in Himachal Pradesh, KVK Mandi and Shimla each conducted 63 demonstrations on 10 ha each on

Table 3: Details of CFLDs conducted on oilseeds during Kharif season

State	Name of KVK	Crop	Allocated		Conducted	
			Area (ha)	Demo (No.)	Area (ha)	Demo (No.)
Soybean						
Punjab	Hoshiarpur	Soybean	10	25	10	25
	Total		10	25	10	25
Himachal Pradesh	Mandi	Soybean	10	25	10	63
	Shimla	Soybean	10	25	10	63
	Total		20	50	20	126
Sesame						
Punjab	Hoshiarpur	Sesame	10	25	10	25
	Pathankot	Sesame	20	50	20	44
	Ropar	Sesame	20	50	20	50
	Nawanshahr	Sesame	10	25	10	17
	Total		60	150	60	136
Himachal Pradesh	Bilaspur	Sesame	20	50	15	38
	Hamirpur	Sesame	10	25	10	31
	Kangra	Sesame	5	13	4	15
	Sirmour	Sesame	20	50	20	250
	Una	Sesame	20	50	20	133
	Total		75	188	69	467
Jammu & Kashmir	Kathua	Sesame	20	50	11	50
	Total		20	50	11	50
Total (Soybean)			30	75	30	151
Total (Sesame)			155	388	140	653
Total (Soybean + Sesame)			185	463	170	804



soybean at farmers' fields. The details of CFLDs conducted during the Kharif season of 2023-24 are given in Table 3.

In Punjab on sesame, a total of 136 CFLDs were conducted on 60 ha area by four KVKs viz. Hoshiarpur, Pathankot, Ropar and Nawanshahr. Similarly in Himachal Pradesh, five KVKs, Bilaspur, Hamirpur, Kangra, Sirmour and Una conducted 467 CFLDs on 69 ha on sesame. In Jammu & Kashmir, KVK Kathua organized 50 demonstrations on 11 ha on sesame. A total of 804 CFLDs were conducted on 170 ha area during Kharif season of 2023-24.

SOYBEAN

PERFORMANCE OF SOYBEAN IN PUNJAB

The CFLDs were conducted on soybean by KVK Hoshiarpur in Punjab. The demonstrated variety was SL-958, with a total area of 10 ha and 25 demonstrations. The yield recorded for the check plots was 14.5 q/ha, while the demonstrations yielded an impressive 17.11 q/ha, indicating a significant percentage increase in yield.

The net returns for the check plots stood at ₹24,100.50, compared to ₹41,795 for the demonstration plots, reflecting the economic benefits of the demonstrated variety. Additionally, the benefit-cost (B: C) ratio for the check plots was 1.58, while it rose to 2.19 for the demonstration plots, highlighting the financial viability of adopting the demonstrated variety SL-958 for soybean cultivation in the region. The details of CFLDs conducted on soybean by KVK Hoshiarpur are given in Table 4.

Table 4: Details of CFLDs conducted on Soybean in Punjab

Name of KVK	Demonstrated Variety	Area (ha)	No. of Farmer	Yield (q/ha)		% increase
				Check	Demo	
Hoshiarpur	SL-958	10	25	14.5	17.1	18.0
Total		20	50			

Name of KVK	Demonstrated Variety	Net Return (Rs/ha)		B:C ratio	
		Check	Demo	Check	Demo
Hoshiarpur	SL-958	24100.5	41795	1.58	2.19
Total		24100.5	41795	1.58	2.9





Scientist visit to Farmers' Soy Field, KVK, Hoshiarpur

PERFORMANCE OF SOYBEAN IN HIMACHAL PRADESH

The CFLDs on oilseeds during Kharif season were conducted on soybean by two KVKs in Himachal Pradesh, viz. Mandi and Shimla. In Mandi, the demonstrated variety was Palam Soya, with a total area of 10 ha and 25 demonstrations. The yield for check plots was 8.50 q/ha, while the demonstrations yielded 9.60 q/ha, reflecting a percentage increase of 12.94 percent. The net returns from check plots were ₹12,844, but the demonstration plots returns were ₹10,532, resulting in a benefit-cost (B: C) ratio of 1.51 for check plots and 1.38 for demonstrations. The details of CFLDs conducted on soybean in Himachal Pradesh are given in Table 5.

In Shimla, 25 demonstrations were conducted on 10 ha demonstrating Harit Soya variety. The check plots yielded 9.83 q/ha, while the yield in demonstration plots was significantly increased to 13.68 q/ha, showing a percentage increase of 39.07 percent.

Table 5: Details of CFLDs conducted on Soybean in Himachal Pradesh

Name of KVK	Demonstrated Variety	Area (ha)	No. of Farmer	Yield (q/ha)		% increase
				Check	Demo	
Mandi	Palam Soya	10	25	8.50	9.60	12.94
Shimla	Harit Soya	10	25	9.83	13.68	39.07
Total		20	50			

Name of KVK	Demonstrated Variety	Net Return (Rs/ha)		B:C ratio	
		Check	Demo	Check	Demo
Mandi	Palam Soya	10532	12844	1.51	1.38
Shimla	Harit Soya	6117	16263	1.22	1.51



KVK Mandi HP Line sowing



CFLDs on Soybean by KVK Shimla (HP)

The net returns were ₹6,117 for check plots and ₹16,263 for demonstration plots, resulting in a B: C ratio of 1.22 for check and 1.51 for demonstrations.

SESAME

The second crop after soybean which was demonstrated by the KVKs under CFLDs on oilseeds during Kharif season of 2023-24 was Sesame. The state wise details of performance of CFLDs on sesame are given below:

PERFORMANCE OF SESAME IN PUNJAB

The CFLDs on sesame were conducted by four KVKs i.e. Hoshiarpur, Pathankot, Ropar and Nawanshahr in Punjab. The improved variety Punjab Til No. 2 of sesame was demonstrated by all KVKs conducting a total of 136 demonstrations on 60 ha area. Among these, the maximum percentage increase in yield (44.46 %) was recorded by KVK Ropar, with a demonstration yield of 4.70 q/ha.



***Monitoring of demonstrations on
Sesame in KVK Hoshiarpur (PB)***



***Field Day on Sesame organized by the
scientists of KVK Pathankot (PB)***



Along with that, a higher net returns and B: C ratio was recorded in demonstrated plots as compare to the local checks. In contrast, least increase yield (14.74 %) was observed in Hoshiarpur, however a significant increase in net returns and B: C ratio was recorded in the district. Apart from this, a percentage increase of 39.34 % and 28.61 % in yield in demonstrated plots was recorded in Pathankot and Nawanshahr respectively. These results demonstrate the significant increase in yield and profitability by cultivating the PB Til No 2 variety. The details of CFLDs conducted on sesame in Punjab are given in Table 6.

Table 6: Details of CFLDs conducted on Sesame in Punjab

Name of KVK	Demonstrated Variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Hoshiarpur	PB Til No 2	10	25	5.20	5.97	14.74
Pathankot	PB Til No 2	20	44	3.73	5.20	39.34
Ropar	PB Til No 2	20	50	3.25	4.70	44.46
Nawanshahr	PB Til No 2	10	17	3.39	4.36	28.61
Total		60	136			

Name of KVK	Demonstrated Variety	Net Return (₹/ha)		B:C ratio	
		Check	Demo	Check	Demo
Hoshiarpur	PB Til No 2	11236	15968	1.38	1.58
Pathankot	PB Til No 2	31300	54600	3.32	5.20
Ropar	PB Til No 2	22763	46906	2.17	3.38
Nawanshahr	PB Til No 2	14123	21880	2.09	2.68

PERFORMANCE OF SESAME IN HIMACHAL PRADESH

A total of 467 CFLDs were conducted on sixty nine ha area on sesame by five KVKs Bilaspur, Hamirpur, Kangra, Sirmour and Una in Himachal Pradesh during Kharif season of 2023-24. The two improved varieties of sesame LTK-4 and PB Til No 2 were demonstrated by the KVKs on farmers' fields. The highest increase in average yield was observed in Una district (31.8%) followed by Bilaspur (27.8%), Sirmour (25.0%) Hamirpur (22.0%) and Kangra (7.11%). Along with an increase in the yield a higher net returns and higher B: C ratio was recorded in demonstrated plots as compared to the local check plots. The details of CFLDs conducted on sesame in Himachal Pradesh are given in Table 7.



Table 7: Details of CFLDs conducted on Sesame in Himachal Pradesh

Name of KVK	Demonstrated Variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Bilaspur	LTK-4	15	38	3.60	4.60	27.78
Hamirpur	PB Til No 2	10	31	2.27	2.77	22.00
Kangra	LTK-4	4	15	4.50	4.82	7.11
Sirmour	PB Til No 2	20	250	4.60	5.75	25.00
Una	PB Til No 2	20	133	4.00	5.27	31.83
Total		69	467			

Name of KVK	Demonstrated Variety	Net Return (₹/ha)		B:C ratio	
		Check	Demo	Check	Demo
Bilaspur	LTK-4	24082	35851	1.92	2.26
Hamirpur	PB Til No 2	-2100	1288	0.91	1.05
Kangra	LTK-4	12500	23100	1.74	2.20
Sirmour	PB Til No 2	4900	10667	1.18	1.37
Una	PB Til No 2	8820	28558	1.39	1.98



Field day on Sesame organized by KVK Sirmour and Bilaspur (HP)

PERFORMANCE OF SESAME IN JAMMU

During Kharif season of 2023-24, 50 demonstrations on 11 hectare area were conducted on sesame by KVK Kathua in Jammu demonstrating the improved variety GJT-5. An average increase of 39.1 percent in yield was observed in demonstration plots as compared to the check plots across CFLDs. Similar increase was observed in net returns and B: C ratio. These results highlight the effectiveness of the GJT- 5 variety in





enhancing both yield and profitability within this region. The details of CFLDs conducted on sesame in Jammu region are given in Table 8.

Table 8: Details of CFLDs conducted on Sesame in Jammu

Name of KVK	Demonstrated Variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Kathua	GJT-5	11	50	3.2	4.45	39.1
Total		11	50			

Name of KVK	Demonstrated Variety	Net Return (₹/ha)		B:C ratio	
		Check	Demo	Check	Demo
Kathua	GJT-5	23000	39000	1.9	3.5

RABI OILSEEDS

During the Rabi season of 2023-24, CFLDs were organized on rapeseed mustard, linseed and sunflower. For rapeseed mustard, a total of 1240 demonstrations on 448.40 ha in Punjab, 826 demonstrations on 179.86 ha in Himachal Pradesh, 676 demonstrations on 103 ha in Uttarakhand and 1154 demonstrations on 239.55 ha were conducted in Jammu & Kashmir. Apart from rapeseed mustard, 45 demonstrations on 11ha area were conducted on sunflower in Punjab. For linseed, in Himachal Pradesh 9.2 ha was covered with 34 demonstrations. Overall, 3975 CFLDs were conducted on 998.01 demonstrating improved varieties and package of practices of rapeseed mustard, sunflower and linseed. The state and crop-wise details of CFLDs conducted during Rabi season of 2023-24 are given in Table 9.

RAPESEED MUSTARD

PERFORMANCE OF RAPESEED MUSTARD IN PUNJAB

During the Rabi season 2023-24, a total of 1240 CFLDs were conducted on 448.40 ha by 20 KVKs of Punjab. The improved variety of canola gobhi sarson GSC-7 and variety of raya sarson RH-725 were demonstrated at farmer's fields. These demonstrations aimed to evaluate the yield, economic returns, and benefit-cost ratios of the demonstrated

Table 9: State and crop wise details of CFLDs conducted during Rabi season

Crop	State	Targets		Achievements	
		Area (ha)	Demo (No.)	Area (ha)	Demo (No.)
Rapeseed & Mustard	Punjab	500	1250	448.4	1240
	Himachal Pradesh	180	450	179.86	826
	Uttarakhand	140	350	103	676
	Jammu & Kasahmir	270	675	239.55	1154
Sunflower	Punjab	20	50	18	45
Linseed	Himachal Pradesh	25	63	9.20	34
Total		1135	2838	998.01	3975



varieties compared to the local checks. The maximum percent increase in yield (58.33 %) was recorded by KVK Barnala followed by KVK Kapurthala (37.73%) and Pathankot (36.80 %). Along with the higher yields a higher net returns and higher B: C ratio was recorded in demonstration plots as compared to the local checks. On the other hand, least increase in yield was recorded by KVK Jalandhar (0.86 %) followed by Ferozepur (4.59 %) and Faridkot (7.54 %). The variations in yield across districts reflect the differing agro-climatic conditions, farming practices, and resource availability in each region, influencing the success of the demonstrated varieties. KVK wise details of CFLDs conducted in Punjab on rapeseed mustard are given in Table 10.

Table 10: Details of CFLDs conducted on Rapeseed Mustard in Punjab during Rabi season

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Amritsar	GSC-7	20.00	46	18.00	19.46	8.11
Barnala	GSC-7	20.00	53	14.47	22.91	58.33
Bathinda	GSC-7	29.60	74	16.50	18.10	9.70
Faridkot	GSC-7	20.00	50	15.25	16.40	7.54
Fatehgarh Sahib	GSC-7	0.80	2	20.63	20.63	0.00
Fazilka	RH-725	30.00	42	19.07	21.42	12.33
Ferozepur	GSC-7	20.00	50	21.25	22.23	4.59
Gurdaspur	GSC-7	20.00	68	17.62	21.10	19.75
Hoshiarpur	GSC-7	30.00	75	15.17	20.12	32.64
Kapurthala	GSC-7	30.00	80	15.43	21.26	37.73
Ludhiana	GSC-7	20.00	50	18.35	21.25	15.80
Mansa	GSC-7	8.00	100	15.13	19.34	27.84
Moga	GSC-7	40.00	150	16.85	19.98	18.59
Sri Muktsar Sahib	GSC-7	20.00	50	17.80	19.30	8.43
Pathankot	GSC-7	20.00	50	12.50	17.10	36.80
Patiala	GSC-7	10.00	25	17.45	20.55	17.80
Ropar	GSC-7	30.00	75	16.90	18.72	10.78
Sangrur	GSC-7	30.00	75	18.20	20.70	13.74
TarnTaran	GSC-7	20.00	50	17.21	18.70	8.67
Jalandhar	GSC-7	30.00	75	20.35	20.52	0.86
Total		448.4	1240			



Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Amritsar	GSC-7	54757	62966	2.48	2.74
Barnala	GSC-7	54039	78667	3.19	4.21
Bathinda	GSC-7	65340	76724	3.14	3.64
Faridkot	GSC-7	38810	43158	2.35	2.71
Fatehgarh Sahib	GSC-7	59897	80719	1.58	3.46
Fazilka	RH-725	94706	107264	5.76	6.35
Ferozepur	GSC-7	66285	74945	2.97	3.23
Gurdaspur	GSC-7	56725	73691	2.49	2.94
Hoshiarpur	GSC-7	43783	70761	2.13	2.82
Kapurthala	GSC-7	70259	86457	2.79	3.08
Ludhiana	GSC-7	70816	90556	3.85	4.56
Mansa	GSC-7	61188	67705	2.81	3.08
Moga	GSC-7	45915	72801	2.40	3.61
Sri Muktsar Sahib	GSC-7	43880	50780	2.15	2.34
Pathankot	GSC-7	52000	78600	3.26	4.49
Patiala	GSC-7	76836	98212	4.91	6.42
Ropar	GSC-7	50140	61870	2.75	3.21
Sangrur	GSC-7	64860	88675	3.31	0.17
TarnTaran	GSC-7	39508	48032	2.04	2.33
Jalandhar	GSC-7	58462	65906	3.58	3.74



*Field day on Rapeseed Mustard organized
KVK Fatehgarh Sahib (PB)*



*Field Visit to CFLD fields by the
scientists of KVK Mansa (PB)*





Field visit by the scientists of KVK Moga to the CFLDs on Rapeseed Mustard (PB)



Farmer-scientist interaction by the scientists of KVK Moga (PB)

PERFORMANCE OF RAPESEED MUSTARD IN HIMACHAL PRADESH

A total of 826 CFLDs were conducted on 180 ha area in Himachal Pradesh on rapeseed mustard during the Rabi season of 2023-24. The improved varieties of rapeseed mustard including GSC-7, Neelam, HPGS-1, Karan Raya, and RH 0749 were demonstrated at farmer's fields in different regions of the state. A total of nine KVKs conducted the CFLDs on rapeseed mustard. The highest percentage increase in yield of 61.20 percent was recorded by KVK Chamba in demonstrated variety Karan Raya followed by KVK Solan (48.57 %) and Kangra (41.18 %) both demonstrating GSC-7 variety of gobhi sarson. Higher net returns with higher B: C ratio were also observed in demonstrated plots as compared to local checks. Overall, the CFLDs in Himachal Pradesh have shown



Field day on Rapeseed Mustard organized by KVK Bilaspur (HP)



promising results, with significant yield improvements and enhanced profitability across different regions, demonstrating the potential of these improved varieties to boost oilseed productivity and income. The details of CFLDs conducted on rapeseed mustard in Himachal Pradesh during Rabi season 2023-24 are given in Table 11.

Table 11: Details of CFLDs conducted in Himachal Pradesh on Rapeseed Mustard during Rabi season

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Bilaspur	GSC-7 & Neelam	20.0	50	6.50	8.00	23.08
Hamirpur	HPGS-1, GSC-7	10.0	27	6.83	7.76	13.56
Kangra	GSC-7	20.0	94	8.50	12.00	41.18
Mandi	GSC-7	10.0	73	4.28	4.81	12.37
Shimla	RH0749	10.2	47	8.25	10.68	29.41
Sirmour	Karan Raya	20.0	185	9.20	12.68	37.86
Solan	GSC-7	19.7	108	4.67	6.93	48.57
Una	GSC-7	50.0	192	9.93	11.20	12.76
Chamba	Karan Raya	20.0	50	6.25	10.08	61.20
Total		179.9	826			

Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Bilaspur	GSC-7 & Neelam	17520	24590	1.71	1.90
Hamirpur	HPGS-1, GSC-7	5392	9433	1.19	1.34
Kangra	GSC-7	19800	27400	1.22	1.33
Mandi	GSC-7	8817	11754	1.35	1.44
Shimla	RH0749	11700	27039	1.34	1.83
Sirmour	Karan Raya	15217	33747	1.47	2.05
Solan	GSC-7	10600	19110	2.18	2.91
Una	GSC-7	17493	26598	1.57	1.87
Chamba	Karan Raya	7350	37875	1.31	2.33



PERFORMANCE OF RAPESEED MUSTARD IN UTTARAKHAND

During the Rabi season of 2023-24, a total of 676 demonstrations were conducted on 103 ha area on rapeseed mustard in Uttarakhand. The improved varieties including PHT-1, PT-508, 45S46, PR-20, and Pant Shweta were demonstrated by eight KVKs of Uttarakhand. The area under CFLDs across the regions varied, with a focus on assessing yield improvements and calculating the net returns for farmers improved package of practices and technologies along with improved varieties which were demonstrated at farmers' fields by KVKs. The maximum increase in yield (78 %) was recorded by KVK Dehradun followed by KVK Haridwar (73 %) and US Nagar (64.71 %). Least percentage increase in yield (3.30%) was recorded by KVK Tehri Garhwal followed by KVK Pithoragarh where an increase of 14.0 percent was recorded in yield in demonstrated plots as compared to the local checks. In Udham Singh Nagar (US Nagar), Pant Shweta variety was demonstrated over 10 ha, resulting in a significant rise in yield and net returns, indicating favorable conditions for this particular variety. Overall, the CFLDs in Uttarakhand have effectively showcased the potential of improved rapeseed mustard varieties to enhance both yield and economic benefits, providing important insights for future crop planning and extension activities in the state. The details of CFLDs conducted on rapeseed mustard in Uttarakhand during Rabi 2023-24 are given in Table 12.

Table 12: Details of CFLDs conducted in Uttarakhand on Rapeseed mustard

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Chamoli	PHT-1	6.00	50	5.00	6.10	22.00
Dehradun	PT-508, 45S46	20.00	90	8.71	15.54	78.42
Haridwar	PR 20	20.00	50	13.44	23.35	73.74
Pauri Garhwal	PHT 1	20.00	196	8.40	10.20	21.43
Pithoragarh	PYS-1	20.00	130	6.05	6.93	14.57
Rudraprayag	PHT1	2.00	25	6.00	7.75	29.17
Tehri Garhwal	PHT1	5.00	108	7.68	7.93	3.30
US Nagar	Pant Shweta	10.00	27	8.50	14.00	64.71
Total		103.00	676			



Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Chamoli	PHT-1	10070	12820	2.14	2.31
Dehradun	PT-508, 45S46	22818	54360	1.78	2.53
Haridwar	PR 20	63225	104794	3.70	5.00
Pauri Garhwal	PHT-1	30280	38590	2.95	3.27
Pithoragarh	PYS-1	9775	14624	1.42	1.62
Rudraprayag	PHT-1	12261	24176	1.66	2.31
Tehri Garhwal	PHT-1	9461	18216	1.40	1.55
US Nagar	Pant Shweta	17925	45700	1.72	2.83



*CFLDs on Rapeseed Mustard
in Chamoli (UK)*



*Diagnostic visit by the KVK scientists
in Pauri Garhwal (UK)*

PERFORMANCE OF RAPESEED MUSTARD IN JAMMU & KASHMIR

The CFLDs on rapeseed mustard in Jammu & Kashmir were conducted across 13 districts to improve the productivity and economic returns. A total of 1154 CFLDs on rapeseed mustard were conducted on 239.55 ha area by 12 KVKs. The improved varieties including Shalimar Sarson-2, RH-725, and RSPN-25 were demonstrated by thirteen KVKs of Jammu & Kashmir. In demonstrated plots higher yield and economic returns were recorded as compared to the local checks. Among the KVKs of Jammu & Kashmir, the maximum percentage increase in yield was observed in Srinagar (80.92 %), followed by Reasi (80.56 %) and Ganderbal (55%). Along with yield increase, a higher net returns and higher B: C ratio was recorded in demonstrated plots compared to the check plots. The positive outcomes, reflecting the broader success of the project in



Critical Input distribution for CFLDs on Rapeseed Mustard by KVK Ganderbal (J&K)



Fields of CFLDs conducted on Rapeseed Mustard in Pulwama (J&K)

enhancing rapeseed mustard cultivation across Jammu & Kashmir. KVK wise details of CFLDs conducted on rapeseed mustard and economics is provide in the Table 13.

Table 13: Details of CFLDs conducted in Jammu & Kashmir on Rapeseed mustard

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Anantnag	Shalimar Sarson-2	30	82	8.48	12.86	51.55
Ganderbal	Shalimar Sarson-2	10	43	12.00	18.60	55.00
Jammu	RH 725, DGS-1	20	191	15.50	20.00	29.03
Kathua	RSPN-25	10	45	8.50	12.60	48.24
Kulgam	Shalimar sarson-2,3	30	125	9.00	11.25	25.00
Rajouri	SGC 6	10	67	6.20	8.96	44.52
Reasi	RSPN-25	10	64	5.40	9.75	80.56
Samba	RH-725	29.4	93	7.00	9.50	35.71
Pulwama	Shalimar Sarson-2	40	125	11.00	16.20	47.27
Shopian	Shalimar Sarson-2	10	52	9.80	11.30	15.31
Bandipora	Shalimar Sarson-2	30.15	142	9.50	12.96	36.39
Srinagar	Shalimar Sarson-2	30 .0	75	7.60	13.75	80.92
Baramulla	Shalimar Sarson-2	10	50	10.72	14.00	30.60
Total		8	1154			



Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Anantnag	Shalimar Sarson-2	16300	43940	1.47	2.32
Ganderbal	Shalimar Sarson-2	55706	86679	1.64	2.55
Jammu	RH 725, DGS-1	42750	65250	2.08	2.69
Kathua	RSPN-25	28500	48500	3.03	4.40
Kulgam	Shalimar sarson 2/3	27000	42000	2.27	2.82
Rajouri	SGC 6	17950	28176	1.96	2.26
Reasi	RSPN-25	20850	40100	0.00	0.00
Samba	RH-725	21500	41000	1.59	2.56
Pulwama	Shalimar Sarson-2	29500	66800	1.81	2.74
Shopian	Shalimar Sarson-2	40706	66719	1.87	2.21
Bandipora	Shalimar Sarson-2	28500	50696	1.75	2.27
Srinagar	Shalimar Sarson-2	25050	63080	1.55	2.00
Baramulla	Shalimar Sarson-2	33200	43550	2.40	2.42

LINSEED

During the Rabi season of 2023-24, linseed was the second crop which demonstrated after rapeseed mustard. Three KVKs Bilaspur, Hamirpur and Kangra of Himachal Pradesh conducted CFLDs on linseed during Rabi season. The details of CFLDs conducted on linseed are given below:

PERFORMANCE OF LINSEED IN HIMACHAL PRADESH

Linseed was the second crop on which demonstrations were conducted by KVKs of Himachal Pradesh after rapeseed mustard. In linseed, a total of 34 CFLDs on 9.20 ha area were conducted by three KVKs Bilaspur, Hamirpur & Kangra. The CFLDs on linseed in Himachal Pradesh aimed at improving the yield and economic returns of linseed cultivation by demonstrating improved variety KL-263. The maximum yield increase (61%) was recorded in Bilaspur followed by Kangra (33%) and Hamirpur (20%) along with better economic returns and B: C ratio. The overall results across the three districts showed the potential of the KL-263 variety to enhance linseed cultivation by improving productivity and profitability, contributing to better economic outcomes for farmers in



Table 14: Details of CFLDs conducted on linseed in Himachal Pradesh

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Bilaspur	KL-263	1.0	3	2.50	4.03	61.00
Hamirpur	KL-263	3.2	11	3.27	3.93	20.31
Kangra	KL-263	5.0	20	3.00	4.00	33.33
Total		9.20	34			

Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Bilaspur	KL-263	7220	30775	1.47	2.31
Hamirpur	KL-263	393	3795	1.02	1.18
Kangra	KL-263	6900	10200	0.54	0.64



Field day on Linseed organized by the scientists of KVK Bilaspur (HP)

Himachal Pradesh. KVK wise details of CFLDs conducted on linseed in Himachal Pradesh are given in Table 14.

SUNFLOWER

PERFORMANCE OF SUNFLOWER IN PUNJAB

A total of 45 CFLDs on sunflower were conducted on 18 ha area by two KVKs, Patiala



Visit to CFLDs on Sunflower by the scientists of KVK Patiala (PB)

and Fatehgarh Sahib of Punjab during summer season. The CFLDs on sunflower cultivation in Punjab focused on the demonstration of the PSH 2080 variety, showcasing its potential benefits for local farmers. In Patiala, the demonstrations covered an area of 10 ha with 25 CFLDs. The results indicated an increase in yield from 19.49 q/ha in traditional practices to 21.88 q/ha with the improved variety, reflecting an increase of 12.26 percent. This improvement translated into significantly higher net returns, reaching ₹78,224, resulting in a remarkable benefit-cost ratio of 4.07, indicating high profitability for farmers adopting this variety. In Fatehgarh Sahib, the PSH 2080 variety was demonstrated over 8 ha with 20 demonstration plots. The yield increased from 16.33 q/ha to 19.12 q/ha, showing a 17.06 percent rise in productivity. However, the net returns were relatively low at ₹2,554, with a benefit-cost ratio of 1.07, suggesting less profitability in comparison to Patiala district. The varying outcomes emphasize the importance of local conditions in sunflower cultivation. Overall, the demonstrations highlighted the potential of the PSH-2080 variety to improve sunflower crop yields and enhance economic returns for farmers in Punjab. KVK wise details of CFLDs conducted on sunflower are given in Table 15.





Table 15: Details of CFLDs conducted on Sunflower in Punjab

Name of KVK	Demonstrated variety	Area (ha)	Demo (No.)	Yield (q/ha)		% increase
				Check	Demo	
Patiala	PSH-2080	10	25	19.49	21.88	12.26
Fatehgarh Sahib	PSH-2080	8	20	16.33	19.12	17.06
Total		18	45			

Name of KVK	Demonstrated variety	Net Return		B:C ratio	
		Check	Demo	Check	Demo
Patiala	PSH-2080	38500	78224	1.29	4.07
Fatehgarh Sahib	PSH-2080	28500	2554	1.72	1.07



CFLDs conducted on Sunflower by KVK Fatehgarh Sahib (PB)

EXTENSION ACTIVITIES

EXTENSION ACTIVITIES CONDUCTED UNDER CFLDS ON OILSEEDS DURING THE YEAR 2023-24

Extension activities are crucial for increasing farmer knowledge, enhancing agricultural productivity, and promoting the adoption of new technologies. These activities bridge the gap between research institutions and farming communities, ensuring that farmers receive the latest information on agricultural practices, weather patterns, pest control, and the effective use of inputs.

During the Rabi and Kharif season of 2023-24, a total of 287 different extension activities were conducted by the KVKs of Punjab, Himachal Pradesh, Uttarakhand and Jammu & Kashmir under the project. A total of 9,550 farmers participated in various extension programs viz. field days, awareness camps, kisan goshtis, field visits, training programs and some other extension programs. Among the extension activities, a total of 63 field days were conducted in which 2,938 farmers participated. A total of 47 awareness camps, aimed at educating farmers on relevant topics, were organized benefiting 1,079 farmers, 43 kisan goshtis or farmer group meetings, were organized involving 2,460 participants, 57 Field visits, which allow experts to directly assess on-ground conditions and offer tailored advice, were organized in which 812 farmers



Field day on Sesame organized by KVK Sirmour (HP)



Field visit to the CFLDs on Sesame by the scientists of KVK Ropar (PB)



Farmer fair organized by the scientists of KVK Hoshiarpur (PB)



Monitoring visit to the CFLDs of Soybean by the scientists of KVK Hoshiarpur (PB)



Field day on Rapeseed Mustard organized by KVK Mansa (PB)



Field day on Rapeseed Mustard organized by KVK Shimla (HP)



Monitoring visit to the CFLDs on Rapeseed Mustard in Bathinda district (PB)



Awareness camp on oilseed cultivation organized by scientists KVK Ferozepur (PB)

participated. Additionally, 25 other extension activities were conducted in which 1,028 farmers participated. On various need based programmes, 52 training sessions on oilseeds cultivation were organized by different KVKs in which a total of 1,233 farmers



Table 16: Details of extension activities conducted under CFLDs on Oilseeds

Extension Activities	No. of Activities	No. of KVKs	No. of Farmers
Field day	63	33	2938
Awareness camp	47	28	1079
Kisan goshti	43	19	2460
Field visit	57	21	812
Others	25	9	1028
Training	52	25	1233
Total	287	-	9550

participated to enhance their knowledge. The details of different extension activities are given in Table 16.

EXTENSION ACTIVITIES CONDUCTED UNDER CFLDs ON OILSEEDS DURING KHARIF SEASON

During Kharif season of 2023-24, 50 different extension activities were conducted by the scientists of KVKs and SAUs of Zone-I on the cultivation of sesame and soybean. In these activities a total of 933 farmers participated. Among the activities a total of 22 field visits followed by 10 field days, 9 training programs, 5 awareness camps and four kisan goshtis were organized by the KVKs. The extension activities were organized to impart the knowledge about improved technologies and package of practices of soybean and sesame crop among the farmers. The maximum participation of farmers were recorded in field days (470) followed by field visits (190), training programs (123), awareness camps (106) and kisan goshtis (44). The details of different extension activities conducted during Kharif season 2023-24 are given in Table 17.

Table 17: Details of extension activities conducted on sesame and soybean during Kharif season

Extension Activities	No. of Activities	No. of KVKs	No. of Farmers
Field day	10	6	476
Awareness camp	5	3	106
Kisan goshti	4	2	44
Field visit	22	7	190
Training	9	3	123
Total	50	-	933





Field visit by PAU scientists to CFLDs on Soybean in Hoshiarpur district (PB)



*Field day on Soybean organized
by KVK Shimla (HP)*



*Field day on Sesame organized
by KVK Pathankot (PB)*

EXTENSION ACTIVITIES CONDUCTED UNDER CFLDs ON OILSEEDS DURING RABI SEASON

During the Rabi season of 2023-24, different extension activities were conducted by the KVKs of Zone-I on cultivation of Rabi oilseed crops linseed, sunflower and rapeseed mustard. The improved cultivation technologies and package of practices of rapeseed mustard, linseed and sunflower were disseminated among the farmers. A total of 237 different extension activities were conducted in which 8617 farmers participated. The extension activities included field days (53), training programs (43), awareness camps (42), kisan goshtis (39), field visits (35) and 25 other extension activities were conducted during November 2023 to March 2024. The maximum participation of farmers was



recorded in field days (2468) followed by kisan goshtis (2416), training programs (1110), awareness camps (973) and other extension activities. The details of extension activities conducted during the Rabi season of 2023-24 are given in Table 18.

Table 18: Details of extension activities conducted on cultivation of Rapeseed Mustard, linseed and sunflower

Extension Activities	No. of Activities	No. of KVKs	No. of Farmers
Field day	53	27	2468
Awareness camp	42	25	973
Kisan goshti	39	17	2416
Field visit	35	14	622
Others	25	9	1028
Training	43	22	1110
Total	273	-	8617



Field day on Rapeseed Mustard organized by KVK Kapurthala (PB)



Field day on Rapeseed Mustard organized by KVK Sirmour (HP)



Input distribution for CFLDs on Rapeseed Mustard by KVK Ganderbal (J&K)



Field day conducted on Rapeseed Mustard by the scientists of KVK Dehradun (UK)

SUCCESS STORIES

Success Story-1

S. SATKAR SINGH

**V.P.O: Jassar, Block: Ajnala,
District: Amritsar**



Name of KVK	Amritsar (Punjab)	
Name of Crop and variety	Gobhi Sarson, Variety- GSC-7	
Background information about farmer's field	S. Satkar Singh has maintained a strong connection with KVK Amritsar for last five years, focusing on oilseeds and pulse crops, and promoting agricultural diversification through CFLDs on Oilseeds from last three years. His fields has clay loam soil with a pH of 8.7, EC of 0.71 dS/m, and low organic carbon (0.40%), had nitrogen (178 kg/ha), phosphorus (28.4 kg/ha), and potassium (278 kg/ha) levels, providing insights for improving productivity.	
Details of technology demonstrated	The farmer focused on key practices to optimize yield and sustainability: using improved seeds for better disease resistance, ensured proper plant spacing, and applied soil test-based fertilization, need-based irrigation for improved water efficiency, while integrated pest management protected crops, boosting productivity and reducing adverse environmental impact.	
Institutional Involvement	Training, demonstrations, and technical guidance were key to farmer education. Training provided knowledge on modern techniques, while demonstrations offered hands-on experience. Technical guidance on crop management, pest control, and soil health, helped farmer to make informed decisions for better productivity and sustainability.	
Success point	Proper method of sowing (Line Sowing), timely thinning and timely fertilization, irrigation and plant protection measures	
Farmer feedback	The farmer was satisfied with the performance of this upgraded canola variety and believed that 2.5 kg of seed per hectare is sufficient for achieving a good yield, as opposed to 3.75 kg of seed per hectare when it comes to other varieties.	
Yield (q/ha)		
- Demonstration		21.82 q/ ha
- Potential yield of variety/technology		22.25 q/ ha
- District average (Previous year)		17.50 q/ ha
- State average (Previous year)		16.26 q/ ha



Performance of technology vis-a-vis Local check (Increase in productivity and returns)

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Farmer practices	20.0	37043	102000	64957	2.8
Demonstration	21.8	36280	111180	74900	3.1
% Increase	9.0	2.1	9.0	15.3	



Awareness program on Gobhi-sarson



Visit of KVK officials to farmer's field





Success Story-2

S. GURWINDER SINGH

**V.P.O: Himmtana, Block: Sangrur,
District: Sangrur**



Name of KVK	KVK Sangrur
Name of Crop and variety	Gobhi Sarson (GSC 7)
Background information about farmer's field	Gurwinder Singh owned 8 acres of land and followed a paddy-wheat and basmati-gobhi sarson cropping pattern. He was eager to improve productivity of his crops so, he adopted scientific farming practices to boost income and profitability.
Details of technology demonstrated	For three years, the farmer struggled with low mustard yields due to untimely sowing, lack of phosphatic fertilizers, and spacing. During Rabi 2021-22, he cultivated Gobhi Sarson (GSC-7) on one acre. Seeking improvement, he followed expert advice from KVK scientists and participated in CFLDs on Oilseeds to laid demonstrations in his field. During the Rabi season of 2023-24, he experimented a Gobhi Sarson + Oats intercropping system on two hectares and achieved gross returns of ₹1,45,000/ha
Institutional involvement	KVK scientists told him about the scientific cultivation and protection practices that enabled him to fetch good yield.
Success point	The farmer sowed Gobhi Sarson (GSC-7) in the third week of October on 0.8 hectares, following recommended practices. He packaged his oil produce and sell it in retail at ₹160 per liter and using the defatted meal for animal feed. Self-marketing of the product enabled him to harvest maximum profit from his oilseed produce
Farmer feedback	Timely sowing (during the second to third fortnight of October), using phosphatic fertilizers, and thinning are essential to achieving yields beyond the potential of the Gobhi Sarson season.
Yield (q/ha)	
- Demonstration	
- Potential yield of variety/technology	22.25 q/ ha
- District average (Previous year)	16.87 q/ ha
- State average (Previous year)	15.79 q/ ha



Performance of technology vis-a-vis Local check (Increase in productivity and returns)

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Farmer practices	17.9	27960	92820	64860	3.31:1
Demonstration	20.7	28660.56	116892	88674.65	04:01
% Increase	15.64	2.5	25.93	36.72	



Bottled canola oil for marketing





LITERATURE DEVELOPED UNDER CFLD ON OILSEEDS 2023-24

➤ Technical Bulletin

1. Ajaib Singh, Maninder Singh Bons, Sunita Rani (2023) Soybean: Zila Hoshiarpur vich Fasli Vibhinnta de Pasaar Baabat Kisaanan Di Pehal- Kadmi, KVK Hoshiarpur (Punjab)
2. Purshotam Kumar, Joginder Pal, Vinod Kumar (2023) Sarson Avm Toriya ki Kheti ki Uttam Technique. KVK Haridwar (Uttarakhand)
3. Manzoor A Ganai, N R Sofi, F A Mohidin, A B Shankoor Khanday, Shahid A Shergojry, M A Mantoo and H V Rehman (2023) Technical Bulletin on Recommendation Package of Practices for Brown Sarson. KVK Kulgam (Jammu & Kashmir)





FINANCIAL OUTCOME OF THE PROJECT

During the year 2023-24 total funds available with ICAR-ATARI, Ludhiana were ₹25,64,971 under the project CFLD on Oilseeds, other than these ₹3,89,863 were available with the KVKs of ICAR- ATARI, Zone-I. With the addition of these two, total funds available under the project CFLDs on Oilseeds during the year 2023-24 were ₹29, 54,834. These funds were utilized by the KVKs for conducting CFLDs during Rabi and Kharif season of 2023-24. Apart from the expenditure incurred in conducting the demonstrations, funds were utilized for monitoring of the CFLDs, conducting trainings and for pay of SRF and DEO for smooth implementation of the project.

Out of these total available funds, ₹5,47,890 were spent by ICAR-ATARI, Ludhiana for monitoring and pay of SRF and DEO. A total amount of ₹45, 94,246 was utilized by the KVKs of Zone-I to conduct the CFLDs during Rabi and Kharif season of 2023-24. The total expenditure incurred up to 31 March 2024 under the project was ₹51, 42,136. The remaining balance as on 31.03.2024 was ₹106 under ICAR-ATARI, Ludhiana and ₹2,40,391 was available with KVKs of Zone-I. The total amount of ₹2, 41,497 was the closing balance with ICAR-ATARI, Ludhiana. The KVK wise details of available funds and expenditure incurred during the year 2023-24 under project CFLD on oilseeds are given in **Annexure II**. The details of funds available and utilized during the year 2023-24 under the project CFLD on Oilseeds are given in Table 19.

Table 19: Statement of expenditure of the project CFLDs on Oilseeds during the year 2023-24

Budget Head		Opening Balance as on 01.04.2023	Sanction Budget FY 2023-24	Funds Received FY 2023-24	Total Funds including OB	Expenditure for FY 2023-24	Closing Balance	Interest generated
		A	B	C	D=A+C	E	F=D-E	G
ICAR-ATARI, Zone-I, Ludhiana	Monitoring	804306	798500	-646805	157501	157395	106	198429
	SRF ATARI	89758	372000	127349	217107	217107	0	
	DEO ATARI	0	300000	173388	173388	173388	0	
	Training	96000	0	-96000	0	0	0	
	Misc.	0	0	0	0	0	0	
Refunded By KVKs		1574907	0	-1574907	0	0	0	
Total ATARI		2564971	1470500	-2016975	547996	547890	106	198429
KVKs		389863	8206500	4444774	4834637	4594246	240391	1770
Total KVKs		389863	8206500	4444774	4834637	4594246	240391	1770
Grand Total (ATARI+KVKs)		2954834	9677000	2427799	5382633	5142136	240497	200199



ANNEXURES

Annexure I

No.1-2/2022/Oilseeds/CA (E- 111634)
Govt. of India
Ministry of Agriculture & Farmers' Welfare
Department of Agriculture & Farmers' Welfare
(Oilseeds Division)

Krishi Bhawan, New Delhi
Dated the 22nd June, 2023

To,
The Deputy Director General (Agricultural Extension),
Indian Council of Agricultural Research,
Krishi Anusandhan Bhavan-I,
Pusa, New Delhi-110012

Subject: Administrative approval for ICAR project entitled Cluster Frontline Demonstrations on oilseeds for 2023-24 (Kharif/Rabi/Summer) under NFSM-Oilseeds to be implemented by KVKs/ATARIs-reg.

Sir,

The approval of Competent Authority is conveyed regarding the administrative approval for **Cluster Frontline Demonstrations on Oilseeds (Kharif / Rabi /Summer) for 2023-24** under NFSM-Oilseeds to implement in 11 Zones of ICAR-Agricultural Technology Application Research Institute (ATARIs) and 611 no. of KVKs with a total outlay of Rs. 22,46,46,000/- (Rupees Twenty-Two Crore Forty-Six Lakh Forty-Six Thousand only), The ATARI-wise details is enclosed at annexure.

ii. The ATARI, Zone-wise approved budget is as under:

S. No.	Implementing Agency/ ATARIs	No. of KVKs	No. of Demo	Area (Ha)	Budget in Rs.	Contractual Staff (in Rs.)				Total (in Rs.)
						SRF (for 12 month)		DEO (for 12 month)		
						No	Amount* in Rs.	No	Amount \$ in Rs.	
1	ATARI-I, Ludhiana	53	3775	1510	9005000	1	372000	1	300000	9677000
2	ATARI-II, Jodhpur	66	11200	4480	31095000	1	420000	1	300000	31815000
3	ATARI-III, Kanpur	89	11700	4680	28321000	1	420000	1	300000	29041000
4	ATARI-IV, Patna	61	11250	4500	26005000	1	420000	1	300000	26725000
5	ATARI-V, Kolkata	48	6670	2668	16524000	1	420000	1	300000	17244000
6	ATARI-VI, Guwahati	37	4925	1970	11510000	1	420000	1	300000	12230000
7	ATARI-VII, Barapani	21	1790	716	4747000	1	420000	1	300000	5467000
8	ATARI-VIII, Pune	74	7225	2890	21655000	1	420000	1	300000	22375000
9	ATARI-IX, Jabalpur #	79	13440	5376	33227000	2	840000	2	600000	34667000
10	ATARI-X, Hyderabad	56	6350	2540	21460000	1	420000	1	300000	22180000
11	ATARI-XI, Bangalore	27	3650	1460	12505000	1	420000	1	300000	13225000
Total		611	81975	32790	216054000	12	4992000	12	3600000	224646000

* Honorarium for one SRF @ Rs. 31000/ month for ATARI, Ludhiana and @ Rs. 35000/ month for all other ATARIs and ICAR Headquarter (Consolidated) for twelve month.

\$ Honorarium for one DEO @ Rs. 25000/ month (consolidated) for all ATARIs and ICAR Headquarter for twelve month.

Contractual staff one SRF and one Data Entry Operator for ATARI, Jabalpur and one SRF & one Data Entry Operator for ICAR Headquarter.

Annexure

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iii. The funds will be utilized for implementing the project as per the guidelines of NFSM-Oilseeds. The approval of the project is subject to the following conditions.

- The farming situation of the cluster of FLD fields will be analyzed by the KVK with a bench mark survey and analysis of prevailing agro-eco-system and its bio-physical resources and problems. Critical inputs, which are generally not applied by farmers, will be provided as part of the technology package to the farmers by the KVK including seed, fertilizer, plant protection chemicals and other inputs. The CFLDs will be conducted in district for specific technology modules of the selected oilseeds crop with each cluster of 10 ha CFLDs, at least two control plot.
- The demonstrations of each oilseeds crop should be organized in cluster approach (at least 10 ha for each cluster).
- ICAR should provide the seeds of latest varieties as a critical inputs to farmers for organization of demonstration.
- The varieties of oilseeds crops to be included in the demonstrations should not be older than 10 years.
- More focus should be given to organize demonstration of oilseeds in Rice Fallow Areas in eastern India.
- **10% of CFLD fund earmarked is allowed to utilized for monitoring, distribution of literature and organization of field day.**
- Preference of varieties should be given to those only which have productivity level more than 25% in compare to National Productivity.
- The scientists from KVK will conduct visit to the demonstrations site to resolve problem on spot.
- Each KVK will furnish cafeteria of interventions for each crop to be undertaken at the demonstration site.
- The demonstrations should be easily accessible and near to the road side to create awareness among the farmers.
- Farmers should be trained for seed production, primary processing etc. on field days.
- For individual farmer, CFLDs should not exceed more than 0.80 ha.
- The qualification and salary of Senior Research Fellow and Data Entry Operator is admissible as per the approved norms of the ICAR/University.
- Travelling Allowance and Daily Allowance is admissible as per norms of Govt. of India.
- The list of beneficiary-farmers should be maintained at each ATARI level.
- The contribution of individual intervention should also be documented.
- Chemical fertilizers are not allowed as input under CFLD however payment of various operations/ services and inputs (seed, bio-fertilizers, soil ameliorants, micro-nutrients etc.) are allowed. Farmers have to apply recommended dose of chemical fertilizers to attain potential yield.
- Each ATARI designated for a particular zone will prepare a detailed report on the demonstrations of oilseeds and a final report will be submitted by Department of Agricultural Extension-ICAR, New Delhi.
- Demonstration will be conducted only by the KVKs / Public Sector Institutions / AICRP centres.
- No change in the allocated numbers and Districts for CFLDs. Seed should be purchased from seed hubs failing which purchase from source only latest varieties (HYV/ Hybrid) released in the last 10 years having productivity more than 25% of the National Productivity of the particular crops.
- **Each KVK will maintain record of the farmers containing name, father name, full address, aadhar no., mobile no. and details of the plot etc.**
- The component wise cost of each demonstration must be maintained and standardize at the level of ATARI. In case of flexibility that should be maintained exclusively.

Annexure
22/6/23
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- Each KVK will involve the Crop Developmental Directorates (CDD) for all important event including training, sharing of details of clusters, production and productivity etc.
- Crop Cutting Experiment(CCE) should be conducted by concern KVK in presence of representative of District Agriculture Officer and CDDs.
- Geo- tagging & referencing must be recorded for each demonstration. ICAR is to ensure that they are in tandem with the Government strategy for oilseeds production.

Yours Faithfully

(Bipul Kumar Srivastava)

Deputy Commissioner (Oilseeds)

Email: srivastava.bipul@gov.in

Encl: As above

Distribution:

1. Director General, ICAR, Krishi Bhawan, New Delhi
2. Dy. Director General (CS), ICAR, Krishi Bhawan, New Delhi
3. The Secretary (Agriculture), Govt. of Punjab, Himachal Pradesh, Uttarakhand, J&K, Rajasthan, Haryana, Jharkhand, Delhi, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Assam, Arunachal Pradesh, Sikkim, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Maharashtra, Gujarat, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Telangana, Puducherry, Tamil Nadu, Karnataka and Kerala.
4. Asstt. Director General (Agriculture Extension) ICAR, Pusa, New Delhi-110012 w.r.t. ICAR letter no. 11-1/2023 AE-II dated 31.03.2023.
5. Director, Agricultural Technology Application Research Institute (Formerly Zonal Project Directorate), Ludhiana (Zone-I)/ Jodhpur (Zone-II)/ Kanpur (Zone-III)/ Patna (Zone-IV)/ Kolkata (Zone-V)/ Guwahati (Zone-VI)/ Barapani (Zone-VII)/ Pune (Zone-VIII)/ Jabalpur (Zone-IX)/ Hyderabad (Zone-X) and Bangalore (Zone-XI) for information and necessary action.
6. Director of Agriculture, Govt. of Punjab, Himachal Pradesh, Uttarakhand, J&K, Rajasthan, Haryana, Jharkhand, Delhi, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Assam, Arunachal Pradesh, Sikkim, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Maharashtra, Gujarat, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Telangana, Puducherry, Tamil Nadu, Karnataka and Kerala.
7. Director, IIOR, Hyderabad-500030, Telangana for information and necessary action.
8. Director, All Crop Development Directorates.

Copy to for information:

1. PPS to Secretary (A & FW), DA&FW, Krishi Bhawan, New Delhi
2. PPS to Agriculture Commissioner, DA&FW, Krishi Bhawan, New Delhi
3. PPS to Joint Secretary (Oilseeds), DA&FW, Krishi Bhawan, New Delhi
4. Asstt. Director General (O&P), ICAR, Krishi Bhawan, New Delhi
5. Additional Commissioner (NFSM), DA&FW, Krishi Bhawan, New Delhi
6. National Consultants (Oilseeds), Shastri Bhawan, New Delhi
7. Director (Fin.) DA&FW, Krishi Bhawan, New Delhi
8. Under Secretary (CA-II), DA&FW Krishi Bhawan, New Delhi
9. Asstt. Commissioner (CA) Oilseeds Division, Krishi Bhawan, New Delhi
10. Programmer for uploading on official website.

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Annexure

Summary of Cluster Front Line Demonstration (CFLDs) for Oilseeds during 2023-24

S. No.	Implementing Agency/ ATARIs	No. of KVKs	No. of Demo	Area (Ha)	Budget in Rs.	Contractual Staff (in Rs.)					Total (in Rs.)
						SRF (for 12 month)		DEO (for 12 month)			
						Amount in		Amount in			
						No.	Rs.	No.	Rs.	Rs.	
1	ATARI-I, Ludhiana	53	3775	1510	9005000	1	372000	1	300000	9677000	
2	ATARI-II, Jodhpur	66	11200	4480	31095000	1	420000	1	300000	31815000	
3	ATARI-III, Kanpur	89	11700	4680	28321000	1	420000	1	300000	29041000	
4	ATARI-IV, Patna	61	11250	4500	26005000	1	420000	1	300000	26725000	
5	ATARI-V, Kolkata	48	6670	2668	16524000	1	420000	1	300000	17244000	
6	ATARI-VI, Guwahati	37	4925	1970	11510000	1	420000	1	300000	12230000	
7	ATARI-VII, Barapani	21	1790	716	4747000	1	420000	1	300000	5467000	
8	ATARI-VIII, Pune	74	7225	2890	21655000	1	420000	1	300000	22375000	
9	ATARI-IX, Jabalpur	79	13440	5376	33227000	2	840000	2	600000	34667000	
10	ATARI-X, Hyderabad	56	6350	2540	21460000	1	420000	1	300000	22180000	
11	ATARI-XI, Bangalore	27	3650	1460	12505000	1	420000	1	300000	13225000	
	Total	611	81975	32790	216054000	12	4992000	12	3600000	224646000	

(Signature)

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ATARI- Wise Summary for CFLDs during 2023-24

ICAR-ATARI, Zone-I Ludhiana							
CFLD Oilseeds Action Plan by KVKs during Kharif, Rabi and Summer 2023-24							
S. No.	Crops	State	No. of KVKs	No. of FLD Demo.	Area in ha.	Assistance for Cluster Demonstration per ha (in Rs.)	Budget (in Rs.)
1. Kharif Season							
1	Sesame	Punjab	4	150	60	5000	300000
		Himachal Pradesh	5	187.5	75	5000	375000
		Uttarkhand	1	25	10	5000	50000
		Jammu & Kashmir	2	100	40	5000	200000
2	Soybean	Punjab	1	25	10	7500	75000
		Himachal Pradesh	3	100	40	7500	300000
		Uttarkhand	5	150	60	7500	450000
Total Kharif Season				737.5	295		1750000
2. Rabi Season							
1	Rapeseed & Mustard	Punjab	20	1250	500	6000	3000000
		Himachal Pradesh	9	450	180	6000	1080000
		Uttarkhand	10	425	170	6000	1020000
		Jammu & Kashmir	13	675	270	6000	1620000
2	Linseed	Himachal Pradesh	4	87.5	35	5000	175000
3	Sunflower	Punjab	3	150	60	6000	360000
Total Rabi Season				3037.5	1215		7255000
A	Total (Kharif+Rabi)			3775	1510		9005000
B	One senior research fellow (SRF) at ATARI @ Rs. 31000/- (Consolidated) per month for 12 months						372000
C	One Data Entry Operator (DEO) at ATARI @ Rs. 25000/- month (Consolidated) for 12 months						300000
Grand Total (A+B+C)							9677000

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Annexure II



GENERAL FINANCIAL RULES 2017

Ministry of Finance
Department of Expenditure

GFR 12 – A [(See Rule 238 (1))]

FORM OF UTILIZATION CERTIFICATE FOR AUTONOMOUS BODIES OF THE GRANTEE ORGANIZATION

AUDIT UTILIZATION CERTIFICATE FOR THE YEAR 2023-24 in respect
of recurring/non-recurring

GRANTS-IN-AID/SALARIES/CREATION OF CAPITAL ASSETS

- Name of the Scheme: Cluster Frontline Demonstration on Oilseeds (ICAR-ATARI, Ludhiana)
- Whether recurring or non-recurring grants- Recurring (General)
- Grants position at the beginning of the Financial year (2023-24)
 - Cash in Hand/Bank = 2954834.00
 - Unadjusted advances = 0
 - Total = 2954834.00
- Details of grants received, expenditure incurred and closing balances: (Actual)

Unspent Balances of Grants received years [figure as at Sl. No. 3 (iii)]	Interest Earned thereon	Interest deposited back to the Government	Grant received during the year			Total Available funds (1+2-3+4)	Expenditure incurred	Closing Balances (5-6)
1	2	3	4			5	6	7
			Sanction No.(i)	Date(ii)	Amount(iii)			
2954834	122561 (2022-23) + 77638 (2023-24)		F. No. A. Extn.11/1/2022-AE-II	10.11.2023	1408706	5582832	5142136	440696 (240497+200199 Interest)
			F. No. A. Extn.11/1/2022-AE-II (e-214669)	19.02.2024	1019093			
Total	200199				2427799			

Component Wise utilization of grants:

Grant-in-aid-General	Grant-in-aid-Salary	Grant-in-aid-Creation of Capital assets	Total
5142136	0	0	5142136

Details of grants position at the end of the year

- Cash in Hand/Bank = 440696
- Unadjusted Advances = 0
- Total = 440696 (Rs. 242161(240391+1770 Interest) lying with KVKs and 198535 (Rs. 106 +198429 interest) lying with ICAR-ATARI, Ludhiana)

महाराष्ट्र सरकार
महाराष्ट्र सरकार
महाराष्ट्र सरकार
महाराष्ट्र सरकार
महाराष्ट्र सरकार

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FORM GFR 12A

GENERAL FINANCIAL RULES 2017

Ministry of Finance
Department of Expenditure

Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose for which it was sanctioned:

- (i) The main accounts and other subsidiary accounts and registers (including assets registers) are maintained as prescribed in the relevant Act/Rules/Standing instructions (mention the Act/Rules) and have been duly audited by designated auditors. The figures depicted above tally with the audited figures mentioned in financial statements/accounts.
- (ii) There exist internal controls for safeguarding public funds/assets, watching outcomes and achievements of physical targets against the financial inputs, ensuring quality in asset creation etc. & the periodic evaluation of internal controls is exercised to ensure their effectiveness.
- (iii) To the best of our knowledge and belief, no transactions have been entered that are in violation of relevant Act/Rules/standing instructions and scheme guidelines.
- (iv) The responsibilities among the key functionaries for execution of the scheme have been assigned in clear terms and are not general in nature.
- (v) The benefits were extended to the intended beneficiaries and only such areas/districts were covered where the scheme was intended to operate.
- (vi) The expenditure on various components of the scheme was in the proportions authorized as per the scheme guidelines and terms and conditions of the grants-in-aid. It has been ensured that the physical and financial performance under **Cluster Frontline Demonstration on Oilseeds (ICAR-ATARI, Ludhiana)** (name of the scheme has been according to the requirements, as prescribed in the guidelines issued by Govt. of India and the performance/targets achieved statement for the year to which the utilization of the fund resulted in outcomes given at Annexure – I duly enclosed.
- (viii) The utilization of the fund resulted in outcomes given at Annexure – II duly enclosed (to be formulated by the Ministry/Department concerned as per their requirements/specifications.)
- (ix) Details of various schemes executed by the agency through grants-in-aid received from the same Ministry or from other Ministries is enclosed at Annexure –II (to be formulated by the Ministry/Department concerned as per their requirements/specifications).

Date:

Place: Ludhiana

Proeti
12/7/24

Nodal Officer

ICAR-ATARI, Ludhiana

Proeti Mangal
Principal Scientist
Indian Council of Agricultural Research
Agricultural Technology Application Research Institute Zone-1
PAU Campus Ludhiana-141004

Permoo Sh
12/7/24

Finance & Accounts Officer

ICAR-ATARI, Ludhiana

प्रमोद शर्मा / PERMOOD SHARMA
वित्त एवं लेखा अधिकारी
Finance & Accounts Officer
भारतीय कृषि अनुसंधान परिषद
Indian Council of Agricultural Research
कृषि प्रौद्योगिकी अनुसंधान अनुसंधान संस्थान
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Zone-1, PAU Campus, Ludhiana-141004

Director
16/7/24

Director

ICAR-ATARI, Ludhiana

निदेश/ Director
डॉ. कृ. म. प. - कृषि प्रौद्योगिकी अनुसंधान अनुसंधान संस्थान
ICAR- Agricultural Technology Application Research Institute
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Zone-1, PAU Campus, Ludhiana-141004, Punjab

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Budget Head		Opening Balance as on 01.04.2023	Sanction Budget FY 2023-24	Funds Received FY 2023-24	Total Funds including OB	Expenditure for FY 2023-24	Closing Balance	Interest generated
		A	B	C	D=A+C	E	F=D-E	G
ICAR-ATARI, Zone-I, Ludhiana	Monitoring	804306	798500	-646805	157501	157395	106	198429
	SRF ATARI	89758	372000	127349	217107	217107	0	
	DEO ATARI	0	300000	173388	173388	173388	0	
	Training	96000	0	-96000	0	0	0	
	Misc.	0	0	0	0	0	0	
Refunded By KVKS		1574907	0	-1574907	0	0	0	
Total ATARI		2564971	1470500	-2016975	547996	547890	106	198429
KVKS		389863	8206500	4444774	4834637	4594246	240391	1770
Total KVKS		389863	8206500	4444774	4834637	4594246	240391	1770
Grand Total (ATARI+KVKS)		2954834	9677000	2427799	5382633	5142136	240497	200199

Director
ICAR-ATARI, Ludhiana

निदेशक /Director
डॉ. अरुण -एच. शैलेन्द्र अनुसंधान अनुसंधान संस्थान
ICAR-Agricultural Technology Application Research Institute
खंड-3, ए.ए.सी. जिला, गुजरात-381004, पंजाब
Zone-3, PAU Campus, Ludhiana-141004, Punjab

Finance & Accounts Officer
 ICAR-ATARI, Ludhiana
 प्रभु श्री / PERMOD SHARMA
 डि. १४ फरवरी २०१९
 Finance & Accounts Officer
 Indian Council of Agricultural Research
 कृषि प्रौद्योगिकी अनुसंधान आयोग
 Agricultural Technology Application Research Institute
 क्षेत्र-१, पटौली, चंडीवर, लुधियाना-१४१००४
 Zone-1, PAU Campus, Ludhiana-141004

Indu
12/7/24

Nodal Officer
ICAR-ATARI, Ludhiana
Preeti Mangal
Principal Scientist
Indian Council of Agricultural Research
Agricultural Technology Application Research Institute Zone-1
ICAR Campus Ludhiana-141004

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Expenditure Statement (KVK wise) under CFLD on Oilseeds 2023-24 for ICAR - ATARI, Ludhiana

(Amount in Rupees)

Name of KVK	Season	Crop	Total fund sanctioned	10 % funds for monitoring	Funds Sanctioned to KVKs	OB as on 01.04.2023	Total Release	Total release including OB	Expenditure	Closing Balance as on 31.03.2024	Interest generated
Amritsar	Rabi	Rapeseed Mustard	120000	12000	108000	0	70000	70000	70000	0	0
Bathinda	Rabi	Rapeseed Mustard	180000	18000	162000	0	75000	75000	75000	0	0
Fardkot	Rabi	Rapeseed Mustard	120000	12000	108000	0	90000	90000	90000	0	0
Fatehgarh Sahib	Rabi	Rapeseed Mustard	120000	12000	108000	0	70000	70000	70000	0	0
	Rabi	Sunflower	120000	12000	108000	0	70000	70000	70000	0	0
Ferozepur	Rabi	Rapeseed Mustard	120000	12000	108000	4880	70000	74880	74676	204	0
Gurdaspur	Rabi	Rapeseed Mustard	120000	12000	108000	13	70000	70013	69859	154	0
Hoshiarpur	Rabi	Rapeseed Mustard	180000	18000	162000	0	85000	85000	85000	0	0
	Kharif	Sesame	50000	5000	45000	4	43246	43250	43250	0	0
	Kharif	Soybean	75000	0	75000	130	74870	75000	75000	0	0
Jalandhar	Rabi	Rapeseed Mustard	180000	18000	162000	0	85000	85000	85000	0	0
Kapurthala	Rabi	Rapeseed Mustard	180000	18000	162000	6660	80000	86660	86016	644	0
Ludhiana	Rabi	Rapeseed Mustard	120000	12000	108000	395	70000	70395	70395	0	0
	Rabi	Sunflower	180000	18000	162000	0	40000	40000	0	40000	0
Mansa	Rabi	Rapeseed Mustard	240000	24000	216000	270	120000	120270	120270	0	0
Moga	Rabi	Rapeseed Mustard	240000	24000	216000	0	110000	110000	110000	0	0
Muktsar	Rabi	Rapeseed Mustard	120000	12000	108000	71	90000	90071	90071	0	0
Nawanshahr	Rabi	Rapeseed Mustard	0	0	0	70	-70	0	0	0	0
Nawanshahr	Kharif	Sesame	50000	0	50000	0	51750	51750	50000	1750	0
Pathankot	Rabi	Rapeseed Mustard	120000	12000	108000	2466	70070	72536	72536	0	0
	Kharif	Sesame	100000	10000	90000	35000	-7500	27500	27500	0	0
Patiala	Rabi	Rapeseed Mustard	60000	0	60000	0	60000	60000	59932	68	0
	Rabi	Sunflower	60000	0	60000	0	55000	55000	55000	0	0
Ropar	Rabi	Rapeseed Mustard	180000	18000	162000	0	90000	90000	89758	242	0
	Kharif	Sesame	100000	10000	90000	100	27400	27500	27496	4	0
Sangrur	Rabi	Rapeseed Mustard	180000	18000	162000	0	85000	85000	85000	0	0
Total PAU, Ludhiana			3315000	307000	3008000	50059	1744766	1794825	1751759	43066	0
Barnala	Rabi	Rapeseed Mustard	120000	12000	108000	0	65000	65000	62287	2713	0
Tarn Taran	Rabi	Rapeseed Mustard	120000	12000	108000	0	65000	65000	65000	0	0
Total GADVASTU, Ludhiana			240000	24000	216000	0	130000	130000	127287	2713	0
Fazilka	Rabi	Rapeseed Mustard	180000	18000	162000	-25575	165575	140000	140000	0	319
Total ICAR-CIPHET, Ludhiana			180000	18000	162000	-25575	165575	140000	140000	0	319

Preeti
12/5/24
Nodal Officer
Preeti Mamgai
Principal Scientist
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Agricultural Technology Application Research Institute, Zone-1
PAU Campus Ludhiana-141004

Finance & Accounts Officer

प्रमोद शर्मा / PERMOD SHARMA
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निदेशक/Director

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Zone-1, PAU Campus, Ludhiana-141004, Punjab

Director

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Annual Report CFLDs on Oilseeds



Name of KVK	Season	Crop	Total fund sanctioned	10 % funds for monitoring	Funds Sanctioned to KVKs	OB as on 01.04.2023	Total Release	Total release including OB	Expenditure	Closing Balance as on 31.03.2024	Interest generated
Bilaspur	Rabi	Rapeseed Mustard	120000	12000	108000	32	85000	85032	85032	0	0
Bilaspur	Rabi	Linseed	50000	5000	45000	0	5000	5000	5000	0	0
Bilaspur	Kharif	Soyabean	150000	0	150000	0	0	0	0	0	0
Bilaspur	Kharif	Sesame	100000	10000	90000	0	63375	63375	63375	0	0
Hamirpur	Rabi	Rapeseed Mustard	60000	6000	54000	9393	30000	39393	39029	364	0
Hamirpur	Rabi	Linseed	50000	5000	45000	5196	20000	25196	21780	3416	0
Hamirpur	Kharif	Sesame	50000	5000	45000	-3640	47140	43500	43500	0	0
Kangra	Rabi	Rapeseed Mustard	120000	12000	108000	1975	65000	66975	66975	0	0
Kangra	Rabi	Linseed	25000	0	25000	0	25000	25000	25000	0	0
Kangra	Kharif	Sesame	25000	2500	22500	0	22500	22500	22500	0	0
Mandi	Rabi	Rapeseed Mustard	60000	6000	54000	-678	54678	54000	51702	2298	0
Mandi	Kharif	Soybean	75000	0	75000	10478	64522	75000	75000	0	0
Sirmaur	Rabi	Linseed	50000	5000	45000	36692	-36692	0	0	0	0
Sirmaur	Rabi	Rapeseed Mustard	120000	12000	108000	-43173	123173	80000	80000	0	0
Sirmaur	Kharif	Sesame	100000	10000	90000	10181	69155	79336	79336	0	0
Una	Rabi	Rapeseed Mustard	300000	30000	270000	72419	28000	100419	100419	0	0
Una	Kharif	Sesame	100000	10000	90000	21000	22510	43510	43510	0	0
TOTAL CSKHPKV Palampur			1555000	130500	1424500	119875	688361	808236	802158	6078	0
Chamba	Rabi	Rapeseed Mustard	120000	12000	108000	0	55000	55000	55000	0	0
Shimla	Kharif	Soyabean	75000	0	75000	-38576	47695	9119	0	9119	0
Shimla	Rabi	Rapeseed Mustard	60000	6000	54000	114881	0	114881	53700	61181	0
Solan	Rabi	Rapeseed Mustard	120000	12000	108000	27840	45000	72840	45083	27757	0
Dr. YSPU&F, Solan			375000	30000	345000	104145	147695	251840	153783	98057	0
Almora	Rabi	Rapeseed Mustard	120000	12000	108000	1200	0	1200	1200	0	0
Almora	Kharif	Soyabean	75000	0	75000	0	0	0	0	0	0
Chimoli	Rabi	Rapeseed Mustard	60000	6000	54000	7250	35000	42250	42250	0	0
Champawat	Rabi	Rapeseed Mustard	60000	6000	54000	0	25000	25000	25000	0	0
Champawat	Kharif	Soyabean	75000	0	75000	0	0	0	0	0	0
Dehradun	Rabi	Rapeseed Mustard	120000	12000	108000	780	75000	75780	75780	0	0
Haridwar	Rabi	Rapeseed Mustard	120000	12000	108000	0	60000	60000	60000	0	0
Nainital	Rabi	Rapeseed Mustard	0	0	0	6103	-6103	0	0	0	0
Pithoragarh	Rabi	Rapeseed Mustard	120000	12000	108000	0	85000	85000	85000	0	0
Pithoragarh	Kharif	Soyabean	75000	0	75000	0	0	0	0	0	0
Rudrapur	Rabi	Rapeseed Mustard	60000	6000	54000	0	25000	25000	25000	0	0
Udham Singh Nagar	Rabi	Rapeseed Mustard	180000	18000	162000	1020	110000	111020	111020	0	0
TOTAL GBPU&T, Pantnagar			1065000	84000	981000	16353	408897	425250	425250	0	0

Nodal Officer
N. Singh, Mungai,
Principal Scientist
Indian Council of Agricultural Research
Agricultural Technology Application Research Institute Zone-1
PAU Campus Ludhiana-141004

Finance & Accounts Officer
Permod Sharma
भारतीय कृषि अनुसंधान परिषद
Indian Council of Agricultural Research
कृषि प्रौद्योगिकी अनुप्रयोग अनुसंधान संस्थान
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Director
Dr. Anu P. K. Singh
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Zone-1, PAU Campus, Ludhiana-141004, Punjab

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Name of KVK	Season	Crop	Total fund sanctioned	10 % funds for monitoring	Funds Sanctioned to KVKs	OB as on 01.04.2023	Total Release	Total release including OB	Expenditure	Closing Balance as on 31.03.2024	Interest generated
Pauri Garhwal	Rabi	Rapeseed Mustard	120000	12000	108000	52147	0	52147	48595	3552	1451
Pauri Garhwal	Kharif	Soyabean	75000	0	75000	0	0	0	0	0	0
Tehri Garhwal	Rabi	Rapeseed Mustard	60000	6000	54000	49633	0	49633	12852	36781	0
Tehri Garhwal	Kharif	Soyabean	150000	0	150000	0	0	0	0	0	0
Tehri Garhwal	Kharif	Sesame	50000	5000	45000	0	0	0	0	0	0
TOTAL VCSG UUIIF, Bharsar			455000	23000	432000	101780	0	101780	61447	40333	1451
Jammu	Kharif	Sesame	0	0	0	1362	-1362	0	0	0	0
Jammu	Rabi	Rapeseed Mustard	180000	18000	162000	1716	100000	101716	88014	13702	0
Kathua	Rabi	Rapeseed Mustard	60000	6000	54000	38018	12000	50018	50012	6	0
	Kharif	Sesame	100000	10000	90000	0	33000	33000	33000	0	0
Rajouri	Rabi	Rapeseed Mustard	60000	6000	54000	40915	-5000	35915	32256	3659	0
Reasi	Kharif	Sesame	0	0	0	12600	-12600	0	0	0	0
Reasi	Rabi	Rapeseed Mustard	60000	6000	54000	60455	-20000	40455	34581	5874	0
Samba	Kharif	Sesame	100000	10000	90000	0	0	0	0	0	0
Samba	Rabi	Rapeseed Mustard	180000	18000	162000	56602	-15000	41602	15064	26538	0
Total SKUAST, Jammu			740000	74000	666000	211668	91638	302706	252927	49779	0
Anantnag	Rabi	Rapeseed Mustard	180000	18000	162000	-30950	192950	162000	162000	0	0
Budgon	Rabi	Rapeseed Mustard	0	0	0	-64800	64800	0	0	0	0
Bandipora	Rabi	Rapeseed Mustard	120000	12000	108000	-43200	151200	108000	108000	0	0
Kulgam	Rabi	Rapeseed Mustard	180000	18000	162000	-43200	205200	162000	162000	0	0
Kupwara	Rabi	Rapeseed Mustard	0	0	0	27300	-27300	0	0	0	0
Pulwama	Rabi	Rapeseed Mustard	240000	24000	216000	-43200	259200	216000	216000	0	0
Srinagar	Rabi	Rapeseed Mustard	180000	18000	162000	-43200	113200	70000	70000	0	0
Ganderbal	Rabi	Rapeseed Mustard	60000	6000	54000	0	54000	54000	54000	0	0
Shopian	Rabi	Rapeseed Mustard	60000	6000	54000	83	53917	54000	54000	0	0
Total SKUAST -K, Srinagar			1020000	102000	918000	-241167	1067167	826000	826000	0	0
Baramulla	Rabi	Rapeseed Mustard	60000	6000	54000	52725	1275	54000	53635	365	0
Total ICAR-CITII, Baramulla			60000	6000	54000	52725	1275	54000	53635	365	0
Grand Total (KVKs)			9005000	798500	8206500	389863	4444774	4834637	4594246	240391	1770
ICAR-ATARI, Ludhiana			672000	0	672000	2564971	-2016975	547996	547890	106	198429
Grand Total (KVKs+ICAR-ATARI, Ludhiana)			9677000	798500	8878500	2954834	2427799	5382633	5142136	240497	200199

Preeti
12/7/24

Nodal Officer

Preeti Mamgai
Principal Scientist
Indian Council of Agricultural Research
Agricultural Technology Application Research Institute, Zone-1
PAU Campus Ludhiana-141004

Permod Sharma
12/7/24

Finance & Accounts Officer

प्रमोद शर्मा / PERMOD SHARMA
वित्त एवं लेखा अधिकारी
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Indian Council of Agricultural Research
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Zone-1, PAU Campus, Ludhiana-141004

Director
16/7/24

Director

निदेशक/Director
क.क.अनु.प.-कृषि प्रौद्योगिकी अनुसंधान अनुसंधान संस्थान
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Annexure III

Demonstrations conducted in different states from the year 2015-16 to 2022-23

Year	Punjab		Himachal Pradesh		Jammu & Kashmir		Uttarakhand		Ladakh		Haryana		Delhi		Grand Total	
	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)	Demo (No.)	Area (ha.)
2015-16	40	16	-	-	50	20	-	-	-	-	310	124	-	-	400	160
2016-17	859	300	329	50	392	113.9	-	-	-	-	616	284	50	20	2246	767.9
2017-18	1260	504.4	188	75.2	226	90.3	-	-	-	-	-	-	-	-	1674	669.9
2018-19	1237	516	265	107.2	180	71.8	178	71.26	-	-	-	-	-	-	1860	766.26
2019-20	612	228	715	118.2	529	93	701	90.5	30	2	-	-	-	-	2587	531.7
2020-21	586	210	808	127	602	129	947	140	15	1	-	-	-	-	2958	607
2021-22	787	290	989	166	625	120	813	128	-	-	-	-	-	-	3214	704
2022-23	1754	590	1502	327.6	1356	333	990	210	-	-	-	-	-	-	5602	1460.6
2023-24	1401	518.4	1433	273.1	1224	255.6	676	103	-	-	-	-	-	-	4734	1150.1
Total	8536	3172.8	6229	1244.3	5184	1226.6	4305	742.76	45	3	926	408	50	20	25275	6817.46



Annexure IV

ICAR-ATARI, Ludhiana Project Team (Year-2023-24)

Nodal Officer/PI	Senior Research Fellow	Data Entry Operator
Dr. Preeti Mangai	Taranpreet Singh	Ajay Singh Yadav

List of contributors in the project CFLDs on Oilseeds (Year 2023-24)

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50.	Pulwama	Dr. Javeed Ahmad Mugloo	Dr. Syed Shujat Hussain
51.	Shopian	Dr Bilal Ahmad Pandit	
52.	Srinagar	Dr. Rayees Ahmad Wani	
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