



ISSN Print: 2664-844X
ISSN Online: 2664-8458
NAAS Rating (2026): 4.97
IJAFA 2026; 8(8): 595-599
www.agriculturaljournals.com
Received: 20-06-2026
Accepted: 24-07-2026

Vaibhav U Sanap
PG Scholar, Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Dr. PP Wankhade
Professor (CAS), Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Dr. MK Rathod
Professor (CAS), Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Sejal P Tayade
PG Scholar, Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Rahul S Memane
PG Scholar, Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Snehal G Bodkhe
PG Scholar, Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Corresponding Author:
Vaibhav U Sanap
PG Scholar, Agricultural
Extension Education Section,
College of Agriculture, Nagpur,
Maharashtra, India

Profile of frontline demonstration on linseed growers in Vidarbha region of Maharashtra

Vaibhav U Sanap, PP Wankhade, MK Rathod, Sejal P Tayade, Rahul S Memane and Snehal G Bodkhe

DOI: <https://www.doi.org/10.33545/2664844X.2026.v8.i8g.1816>

Abstract

The findings revealed that, more than fifty (56.66%) per cent of beneficiary and fifty per cent (50.00%) non-beneficiary growers were found in middle age group i.e. 36 to 50 years. In case of education, 43.33 per cent of beneficiary and 36.67 per cent of non-beneficiary growers were educated up to secondary school level of education. The beneficiary (46.67%) and non-beneficiary (41.67%) growers possessed semi-medium category of land holding. Majority (95.00%) of beneficiary and (98.33%) non-beneficiary growers of linseed demonstrations having area under linseed cultivation up to 1.00ha. In case experience in linseed cultivation, 66.66 per cent of beneficiary and 63.34 per cent of non-beneficiary growers having medium level of experience in linseed cultivation. In case of sources of irrigation, 61.67 per cent of beneficiary and 43.33 per cent of non-beneficiary growers having medium extent sources of irrigation. Regarding social participation, 63.33 per cent beneficiary and 80.00 per cent non-beneficiary growers low level of social participation. Regarding sources of information, 65.00 per cent beneficiary and 70.00 per cent non-beneficiary growers medium level of sources of information. The innovativeness of beneficiary growers was found 75.00 per cent, whereas it was 55.00 per cent for non-beneficiary growers medium level. Regarding risk orientation, 63.33 per cent beneficiary and 55.00 per cent non-beneficiary growers fell under medium level of risk orientation. The market orientation of beneficiary growers was found 63.33 per cent, whereas it was 60.00 per cent for non-beneficiary growers fell under medium level. The knowledge level 98.33 per cent of beneficiary growers found to have high knowledge level and non-beneficiary growers, 93.33 per cent of them found to have medium level of knowledge. The adoption 96.67 per cent of beneficiary growers found to have high adoption level and non-beneficiary growers, 95.00 per cent of them found in medium level of adoption about recommended cultivation practices of linseed.

Keywords: Profile, Linseed, Front Line Demonstrations (FLDs), Beneficiary and non-beneficiary growers

Introduction

Front Line Demonstrations (FLDs) is a special way for researchers to work directly with farmers. Scientists play an important role in planning, implementing, and monitoring Frontline Demonstrations (FLDs) of improved agricultural technologies. Through these demonstrations, they receive direct feedback from farmers on the performance of crops such as wheat, rice, and pulses and on the practical usefulness of the recommended technologies under actual field conditions. Such field-level feedback helps scientists identify practical problems and improve their research programmes according to farmers' needs. In FLDs, subject matter scientists provide technical guidance and relevant knowledge to extension scientists for effectively organizing and conducting demonstrations. This coordination between research and extension helps in understanding farmers' requirements and in modifying technologies so that they are more practical, acceptable, and easier to adopt. The FLDs conducted for rice, wheat, and pulses are implemented under the National Food Security Mission (NFSM) through the ICAR and State Agricultural Universities (SAUs) system. Major institutions associated with these demonstrations include the Directorate of Rice Research, Hyderabad, the Directorate of Wheat Research, Karnal, and the Indian Institute of Pulse Research, Kanpur.

Linseed (*Linum usitatissimum* L.) is one of the oldest cultivated crops and is mainly grown for its seeds and fibre. All parts of the linseed plant have useful applications, either in their

natural form or after suitable processing. Linseed is broadly classified into two major types based on seed size: small-seeded and bold-seeded varieties. Small-seeded linseed comes from South-Western Asia, including India, Afghanistan, and Turkey, while bold-seeded linseed comes from the Mediterranean regions like Asia Minor, Egypt, Algeria, Spain, Italy, and Greece (Singh *et al.* 2020) ^[10].

In Maharashtra alone, linseed is cultivated on 56.10 thousand hectares, with a yield of 267.23 kg per hectare and an average productivity of 14.99 tonnes per hectare in 2020-21 (pdkv.ac.in). In Maharashtra, Bhandara, Osmanabad, Gondia, Nagpur, Gadchiroli are major linseed growing districts. Area and production of linseed in Maharashtra is 6000 ha and 3000 tonnes with productivity of 464 kg/ha in 2025-26 (Krishi.maharashtra.gov.in).

Methodology

The present study was conducted in the Vidarbha region of Maharashtra, specifically in the Chandrapur district. Two tahsils were selected on the basis of maximum number of FLDs linseed growers. Further, 10 villages from these two tahsils were selected covering all the FLD beneficiary growers and non-beneficiary growers. Total grower whose field was taken up for FLD during the year 2025-2026 was selected. Thus, in total 120 linseed growers were selected for the present study, out of which 60 beneficiary and 60 non-beneficiary were respondents for the present study. The socio-economic, communication and psychological variables were studied to know the profile of FLD and non-FLD growers. The data was collected through the personal interview method and analysed using mean, standard deviation, frequencies, arbitrary method, equal interval method and percentages for drawing meaningful interpretations.

Table 1: Profile of the cluster frontline demonstration beneficiary and non-beneficiary

Profile characteristics	Categories	Beneficiary (n = 60)		Non - Beneficiary (n = 60)	
		Frequency	Percent	Frequency	Percent
Socio-economic variables					
Age	Young (Up to 35 years)	10	16.67	04	06.67
	Middle (36 - 50 years)	34	56.67	30	50.00
	Old (above 50 years)	16	26.67	26	43.33
Education	Illiterate	00	00.00	04	06.67
	Primary school	09	15.00	13	21.67
	Middle school	05	8.33	10	16.67
	Secondary school	26	43.33	22	36.67
	Higher Secondary School	12	20.00	05	08.33
	College/ Graduation	08	13.33	06	10.00
Land holding	Marginal (Up to 1.00)	05	08.33	07	11.67
	Small (1.01 - 2.00)	14	23.33	17	28.33
	Semi - medium (2.01 - 4.00)	28	46.67	25	41.67
	Medium (4.01 - 10.00)	12	20.00	11	18.33
	Large (Above 10.00)	01	01.67	00	00.00
Area under linseed cultivation	Up to 1.00	57	95.00	59	98.33
	1.01 to 2.00	02	03.33	01	01.67
	Above 2.00	01	01.67	00	00.00
Experience in linseed cultivation	Low	04	06.67	14	23.33
	Medium	40	66.66	38	63.34
	High	16	26.67	08	13.33
Sources of irrigation	Low	23	38.33	33	55.00
	Medium	37	61.67	26	43.33
	High	00	00.00	00	00.00
Social participation	Low	38	63.33	48	80.00
	Medium	19	31.67	11	18.33
	High	03	05.00	01	01.67
Communication variables					
Sources of information	Low	01	01.67	16	26.67
	Medium	39	65.00	42	70.00
	High	20	33.33	02	03.33
Psychological variables					
Innovativeness	Low	01	01.67	25	41.67
	Medium	45	75.00	33	55.00
	High	14	23.33	02	03.33
Risk orientation	Low	09	15.00	24	40.00
	Medium	38	63.33	33	55.00
	High	13	21.67	03	05.00
Market orientation	Low	4	6.67	15	25.00
	Medium	38	63.33	36	60.00
	High	18	30.00	9	15.00

Results and Discussion

The beneficiary growers and non-beneficiary growers were distributed into different categories based on their selected

profile characteristics and the results were presented in the Table 1.

Age: more than half (56.67%) of beneficiary growers belonged to middle age group i.e. 36 to 50 years of age, followed by old age i.e. above 50 years of age to the (26.67%). Remaining (16.67%) of beneficiary growers were in the young age category i.e. up to 35 years. Regarding non-beneficiary growers half (50.00%) of the growers were belonged in middle age group i.e. 36 to 50 years of age group, followed by old age group i.e. above 50 years to extent of (43.33%). Remaining (06.67%) of non-beneficiary growers were in young age category i.e. up to 35 years. This may be because farmers in this age group are actively involved in farming activities and have gained sufficient practical experience over the years to manage their farm operations effectively. This finding is supported by Deshmukh *et al.* (2018) [2] and Bhanarkar (2019) [1].

Education: The largest proportion of beneficiary 43.33 per cent of beneficiary growers were educated up to secondary school level, followed by 20.00 per cent beneficiary growers educated up to higher secondary school, 15.00 per cent educated up to primary school and 13.33 per cent of beneficiary growers educated up to college. The Remaining beneficiary growers educated up to middle school level (8.33%) and none of the linseed beneficiary growers were found illiterate. Regarding non-beneficiary growers, 36.67 per cent were found educated up to secondary school level, followed by 21.67 per cent beneficiary growers educated up to primary school, 16.67 per cent educated up to middle school and 10.00 per cent of beneficiary growers educated up to college. The Remaining beneficiary growers educated up to higher secondary school level 8.33 per cent and 6.67 percent were found illiterate. This may be because secondary education provides farmers with basic reading and understanding skills, which help them to obtain and understand agricultural information received through extension workers, printed materials and other sources. This finding is supported by Deshmukh *et al.* (2018) [2] and Bhanarkar (2019) [1].

Land holding: 46.68 per cent beneficiary growers possess semi-medium land holding i.e. 2.01 - 4.00 ha, followed by 23.33 per cent possess small land holding i.e. 1.01 - 2.00 ha, whereas 20.00 per cent beneficiary belonged to medium land holding i.e. 4.01 - 10.00 ha and 08.33 per cent beneficiary belonged to marginal land holding i.e. up to 1.00 ha. Very less i.e. 01.67 per cent of beneficiary growers was found to be in large category of land holding i.e. above 10.00 ha. Regarding the non-beneficiary growers, 41.67 per cent beneficiary growers possess semi-medium land holding i.e. 2.01 - 4.00 ha, followed by 28.33 per cent possess small land holding i.e. 1.01 - 2.00 ha, whereas 18.33 per cent beneficiary belonged to medium land holding i.e. 4.01 - 10.00 ha and 11.67 per cent beneficiary belonged to marginal land holding i.e. up to 1.00 ha. None of the non-beneficiary growers was found to be in large category of land holding i.e. above 10.00 ha. This could be because farmers with moderate-sized holdings can allocate a part of their land to linseed while also maintaining other crops in their farming system. This finding is supported by Bhanarkar (2019) [1] and Divya Ambarkar (2025) [4].

Area under linseed cultivation: The largest proportion of beneficiary 95.00 per cent of area under linseed cultivation up to 1.00 ha, followed by 03.33 per cent of growers had

area under linseed cultivation in between 1.01 ha to 2.00 ha and very negligible per cent (01.67%) of growers having area under linseed cultivation above 2.00 ha. In case of non-beneficiary growers, 98.33 per cent of growers have area under linseed cultivation up to 1.00 ha, followed by 1.67 per cent of farmers has area under linseed cultivation in between 1.01 to 2.00 ha. This may be because linseed is generally grown on a relatively small area, often as a rabi-season or supplementary crop along with other important crops. This finding is supported by Bhanarkar (2019) [1].

Experience in linseed cultivation: The majority of beneficiary 66.66 per cent of beneficiary growers fell under the medium experience (5 to 10 years) category in linseed cultivation. 26.67 per cent of the beneficiary growers reported high experience in linseed cultivation (Above 10 years). A smaller portion of beneficiary growers (06.67%) had low experience (Up to 5 years). In case of non-beneficiary growers, 63.34 per cent of non-beneficiary growers fell under the medium experience (5 to 10 years) category in linseed cultivation, Follow by low experience of non-beneficiary growers i.e. (Up to 5 years) (06.67%) and 13.33 per cent of the non-beneficiary growers reported high experience in linseed cultivation (Above 10 years). This indicates that most growers had been cultivating linseed for a reasonable period and had acquired practical knowledge through repeated cultivation and day-to-day farming experience. This finding is supported with Bhanarkar (2019) [1] and Divya Ambarkar (2025) [4].

Sources of irrigation: Regarding irrigation, 61.67 per cent of beneficiary growers fell under the medium source of irrigation category. Further, 38.33 per cent of the beneficiary growers belonged to the low source of irrigation category, while none of beneficiary were in the high source of irrigation category. In case of non-beneficiary growers, 55.00 per cent fell under the low source of irrigation category. This was followed by 43.33 per cent of non-beneficiary growers who belonged to the medium source of irrigation category, whereas none of non-beneficiary were categorized under the high source of irrigation category. This may be because linseed can be grown with limited irrigation, particularly in areas where farmers depend partly on rainfall and use available irrigation mainly during critical crop stages. This finding is supported with Dipali Mahale (2024) [3] and Divya Ambarkar (2025) [4].

Social participation: A majority of beneficiary 63.33 per cent of beneficiary growers had low level of social participation, followed by 31.67 per cent beneficiary growers had medium level of social participation and only 5.00 per cent of the beneficiary growers had high level of social participation. In case of non-beneficiary, majority 80.00 per cent of growers had low level of social participation, followed by 18.33 per cent had medium level of social participation and only 1.67 per cent of the beneficiary growers had high level of social participation. This could be due to the limited involvement of growers in formal organizations, groups and social activities, as their time is largely occupied by farm and household responsibilities. This finding is supported by Bhanarkar (2019) [1] and Divya Ambarkar (2025) [4].

Sources of information: The majority of beneficiary 65.00 per cent of beneficiary growers uses medium level of source of information, followed by high level of source of information to the extent of 33.33 per cent. Only 1.67 per cent beneficiary growers uses low level of source of information. In case of non-beneficiary growers, 70.00 per cent of growers uses medium level of source of information, followed by low level of source of information of non-beneficiaries to the extent of 26.67 per cent and only 03.33 per cent of non-beneficiary growers uses high level of source of information. This suggests that growers were receiving agricultural information from some available sources, such as fellow growers, extension personnel, input dealers, demonstrations and mass media, but their exposure was not extensive. This finding is supported by Kajal Bhartilak (2017) ^[6] and Bhanarkar (2019) ^[1].

Innovativeness: Most of the beneficiary growers 75.00 per cent of beneficiary growers having medium level of innovativeness, followed by high level of innovativeness to the extent of 23.33 per cent. Very few 1.67 per cent beneficiary growers belonged to low level of innovativeness. In case of non-beneficiary growers, more than fifty (55.00%) per cent of growers having medium level of innovativeness, followed by low level of innovativeness to the extent of 41.67 per cent. Only (3.00%) of non-beneficiary growers having high level of innovativeness. The comparatively higher proportion among beneficiary growers may be because their participation in frontline demonstrations gave them opportunities to see and learn about improved practices directly in the field, which may have encouraged them to try new technologies. This finding is supported with Bhanarkar (2019) ^[1] and Divya Ambarkar (2025) ^[4].

Risk orientation: The majority of beneficiary 63.33 per cent of beneficiary growers having medium level of risk orientation category, followed by high level of risk orientation to the extent of 21.67 per cent and 15.00 per cent of beneficiary growers belonged to low level of risk orientation category. In case of non-beneficiary growers, 55.00 per cent of growers found in medium level of risk orientation category, followed by low level of risk orientation of non-beneficiary growers to the extent of 40.00 per cent and only 5.00 per cent of non-beneficiary growers belonged to high level of risk orientation category. This may be because farmers generally prefer to adopt new practices after considering their expected benefits, costs and possible risks rather than taking decisions without sufficient assurance. This finding is supported by Deshmukh *et al.* (2018) ^[2] and Bhanarkar (2019) ^[1] and Divya Ambarkar (2025) ^[4].

Market orientation: The majority of beneficiary (63.33 per cent of beneficiary growers belonged to the medium level of market orientation category, followed by 30.00 per cent having high market orientation and only 6.67 per cent of beneficiary growers belonged to low level of market orientation. In case of non-beneficiary growers, 60.00 per cent were found in the medium level of market orientation category, followed by 25.00 per cent having low market orientation and 15.00 per cent belonged to high market orientation. This may be because farmers were aware of market prices and demand to some extent, but factors such as local market facilities, transportation and availability of buyers may have limited their market-oriented activities. This finding is supported with Mahajan (2020) ^[7] and Divya Ambarkar (2025) ^[4].

Table 2: Distribution of beneficiary and non-beneficiary growers according to the knowledge level about recommended cultivation practices of linseed

Sl. No.	Knowledge	Beneficiary growers (n=60)		Non-beneficiary growers (n=60)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	00	00.00	00	00.00
2.	Medium	01	01.67	56	93.33
3.	High	59	98.33	04	06.67
	Total	60	100.00	60	100.00

The results presented in Table 2 revealed the distribution of beneficiary and non-beneficiary linseed growers. It indicated that, 98.33 per cent of beneficiary growers found to have high knowledge level, followed by only 1.67 per cent of beneficiary growers found to have medium level knowledge about recommended linseed cultivation practices. No one beneficiary growers was found in low knowledge level. In case of non-beneficiary growers, 93.33 per cent of them found to have medium level of knowledge about recommended linseed cultivation practices, followed

by 6.67 per cent of them having high level of knowledge whereas no one of them found in low level of knowledge. The higher knowledge among beneficiary growers may be mainly due to their direct exposure to frontline demonstrations, technical guidance, training and interaction with extension personnel. Practical learning through demonstrations may have helped them understand the recommended practices more clearly. This finding is supported by Kushwaha (2020) ^[8], Mahajan (2020) ^[7], Divya Ambarkar (2025) ^[4].

Table 3: Distribution of beneficiary and non-beneficiary growers according to the adoption level about recommended cultivation practices of linseed

Sl. No.	Adoption	Beneficiary growers (n=60)		Non-beneficiary growers (n=60)	
		Frequency	Per cent	Frequency	Per cent
1.	Low	00	00.00	00	00.00
2.	Medium	02	03.33	57	95.00
3.	High	58	96.67	03	05.00
	Total	60	100.00	60	100.00

The results presented in Table 3 revealed the distribution of beneficiary and non-beneficiary linseed growers. It indicated that, 96.67 per cent of beneficiary growers found to have high adoption level, followed by only 3.33 per cent in medium adoption level. No one beneficiary growers was found in low adoption level. In case of non-beneficiary growers, 95.00 per cent of them found in medium level of adoption about recommended cultivation practices of linseed, followed by 5.00 per cent of them having high level of adoption whereas no one non-beneficiary growers was found in low level of adoption. The higher adoption among beneficiary growers may be because they had the opportunity to observe the benefits of improved linseed production practices under actual field conditions. The guidance and support received during the demonstrations may also have increased their confidence in applying these practices on their own farms. This finding is supported by with Bhanarkar (2019) ^[1], Riya Kushwaha (2020) ^[8], Mahajan (2020) ^[7].

Conclusion

The results revealed that majority of the FLDs beneficiary growers and non-beneficiary growers were found in middle age group i.e. 36 to 50 years. In case of education beneficiary and non-beneficiary growers were educated up to secondary school level of education. The beneficiary and non-beneficiary growers possessed semi-medium category of land holding. Majority beneficiary and non-beneficiary growers of linseed demonstrations having area under linseed cultivation up to 1.00ha. In case experience in linseed cultivation, beneficiary and non-beneficiary growers having medium level of experience in linseed cultivation. In case of sources of irrigation, beneficiary and non-beneficiary growers having medium extent sources of irrigation. Regarding social participation, beneficiary medium level of social participation and non-beneficiary growers low level of social participation. Regarding sources of information, beneficiary and non-beneficiary growers medium level of sources of information. The innovativeness of beneficiary growers whereas non-beneficiary growers fell under medium level. Regarding risk orientation, beneficiary and non-beneficiary growers fell under medium level of risk orientation. The market orientation of beneficiary growers whereas, non-beneficiary growers fell under medium level. High knowledge regarding beneficiary and medium knowledge level found in non - beneficiary. In case of adoption high level of adoption found in beneficiary and medium level in non - beneficiary.

References

1. Bhanarkar MG. Impact of linseed demonstrations on the beneficiary farmers [M.Sc. thesis]. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2019.
2. Deshmukh SK, Tekale VS, Bhople PP, Rathod MK. Impact of frontline demonstration of soybean conducted by KVK in Washim District, RRC project. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2018.
3. Mahale DR. Attitude of farmers towards use of solar energy in agriculture [M.Sc. thesis]. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2024.
4. Ambarkar D. Adoption gap in linseed cultivation in Vidarbha region [M.Sc. thesis]. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2025.
5. Government of Maharashtra. Krishi Vibhag Maharashtra Shasan. 2025-2026. <https://krishi.maharashtra.gov.in>
6. Bhaltilak K. Knowledge and adoption of insecticide as per the label claim by cotton growers in Akola district [M.Sc. thesis]. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2017.
7. Mahajan SA. Impact of pigeonpea demonstrations on beneficiary farmers [M.Sc. thesis]. Akola: Dr. Panjabrao Deshmukh Krishi Vidyapeeth; 2020.
8. Kushwaha R. Impact of technological intervention among
9. beneficiaries of cluster frontline demonstration on linseed in Rewa district [M.Sc. thesis]. Jabalpur: Jawaharlal Nehru Krishi Vishwa Vidyalyaya; 2020.
10. Dr. Panjabrao Deshmukh Krishi Vidyapeeth. All India Coordinated Research Project on Oilseeds (Linseed & Mustard). 2020-2021. <https://www.pdkv.ac.in>
11. Singh C, Singh P, Singh R. Modern Techniques of Raising Field Crops. 2020. p. 290-292