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Communication Behaviour of Mentha Growers in Barabanki and Lucknow Districts of Uttar Pradesh.

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ABSTRACT

The study entitled "Communication Behaviour of Mentha Growers in Barabanki and Lucknow Districts of Uttar Pradesh" was carried out to analyse the communication pattern, information sources, and behavioural indices of mentha growers. A total of 200 respondents were purposively selected—100 each from Harakh block of Barabanki district and Gosainganj block of Lucknow district. Primary data were collected through a well-structured interview schedule and analysed using statistical tools such as mean, standard deviation (SD), coefficient of variation (CV), and frequency analysis. Findings revealed that most respondents belonged to the middle-age group with medium education and farming experience. Informal communication channels such as progressive farmers, neighbours, and input dealers were more active compared with formal institutional contacts. A majority (60 %) of mentha growers exhibited medium communication behaviour, indicating balanced exposure to traditional and modern information channels.

INTRODUCTION

Agriculture forms the backbone of India's rural economy, providing livelihood to more than half of the population. The growth and sustainability of agriculture depend largely on effective communication systems that ensure the timely transfer of knowledge and innovations from research institutions to the farming community. Despite technological advancements, a considerable communication gap still persists between

scientists and farmers, particularly in developing countries like India.

Among the high-value crops, *Mentha arvensis L.* (Japanese mint), commonly known as "pudina," is an important aromatic and industrial crop cultivated primarily for its essential oil. Globally, the mentha oil and menthol industry is valued at over USD 4 billion, with India being the largest producer and exporter, contributing nearly 80 per cent of global mentha oil production. The crop covers about 3.48 lakh hectares in India and supports over six lakh farmers directly or indirectly, mainly in northern India. Uttar Pradesh stands as the leading mentha-producing state, contributing nearly 85 per cent of India's total mentha oil output. The state's favourable agro-climatic conditions, assured irrigation facilities, and the presence of numerous distillation units have made it the "Mint Hub of India." Within Uttar Pradesh, Barabanki and Lucknow are the two most prominent mentha-growing districts.

Barabanki district, popularly known as the "Mint City of India," has a large area under mentha cultivation, estimated between 20,000 and 58,000 hectares as per district and CIMAP (Lucknow, 2022) records. The district produces approximately 7,500 metric tonnes of mentha oil annually with an average productivity of about 166 kg/ha. On the other hand, Lucknow district, especially the Gosainganj block, is also known for intensive mentha cultivation during the summer season. Together, both districts represent the heart of mentha cultivation in Central Uttar Pradesh. Despite their production potential, wide variations exist among farmers in the adoption of improved cultivation practices due to differences in communication behaviour, access to extension services, and information exposure. Many farmers still rely on traditional information sources, face limited institutional contact, and have inadequate opportunities for training or scientific advisory support. Communication plays a pivotal role in bridging the gap between scientific research and field application. The communication behaviour of farmers refers to their exposure to different sources of information—such as interpersonal contact with progressive farmers, extension agents, and the use of mass media like radio, television, and mobile phones—which directly influence their knowledge, decision-making, and adoption behaviour.Considering these facts, the present study entitled "**Communication**

Behaviour of Mentha Growers in Barabanki and Lucknow Districts of Uttar Pradesh" was undertaken with the following specific objectives:

1. To study the socio-personal characteristics of mentha growers in the study area.
2. To examine the knowledge and adoption levels of mentha growers in Lucknow and Barabanki districts of Uttar Pradesh.
3. To assess the communication behaviour and sources of agricultural information used by mentha growers.
4. To identify the constraints faced by mentha growers in accessing and utilizing agricultural information

RESEARCH METHODOLOGY

The present study entitled "Communication Behaviour of Mentha Growers in Barabanki and Lucknow Districts of Uttar Pradesh" was conducted to assess the communication pattern, information sources, and constraints faced by mentha growers in Central Uttar Pradesh.

Locale of the Study

The study was carried out in Uttar Pradesh, India's leading mentha-producing state. Two districts, Barabanki and Lucknow, were purposively selected owing to their large area, production, and concentration of mentha-based enterprises. Barabanki is popularly known as the "Mint City of India," while Lucknow (especially the Gosainganj block) is also an important mentha-growing region with assured irrigation and distillation facilities.

Sampling Design

A multistage purposive-cum-random sampling technique was followed. From each district, one block—Harakh (Barabanki) and Gosainganj (Lucknow)—was purposively selected. From each block, ten villages were randomly chosen. From every selected village, ten mentha growers were randomly selected. Thus, the total sample comprised 200 respondents (100 from each district).

Village Details

Harakh Block (Barabanki)	Gosainganj Block (Lucknow)
Chaksar	Hardoeya
Mirjapur	Hasnapur
Sekhpur Karimabad	Mahura Kala
Badapur	Mahura Khurd
Tahipur	Asti
Manpur	Bastiya
Dehva	Kapera
Boja	Karsanda
Chandauli	Panchsara
Pachasi	Kewali

Selection of Respondents

A total of 200 mentha growers were interviewed personally. Respondents were heads of households actively engaged in mentha cultivation and decision-making.

Data Collection

Primary data were collected through personal interviews using a structured and pre-tested interview schedule, covering socio-economic traits, communication behaviour, knowledge, adoption, and constraints. Secondary data were obtained from CIMAP reports, government documents, and relevant publications.

Measurement of Communication Behaviour

The Communication Behaviour Index (CBI) was developed based on indicators such as interpersonal communication, mass-media

exposure, extension contact, and information-seeking behaviour. Each item was rated on a three-point scale (High = 3, Medium = 2, Low = 1).

Index (%) = (Obtained Score / Maximum Possible Score) × 100

Respondents were classified as Low, Medium, or High communicators based on mean ± SD.

Statistical Analysis

Data were coded, tabulated, and analyzed using frequency, percentage, mean, standard deviation (SD) and coefficient of variation (CV) with the help of MS Excel and SPSS software to draw meaningful inferences.

RESULTS AND DISCUSSION

1. Formal Sources of Communication

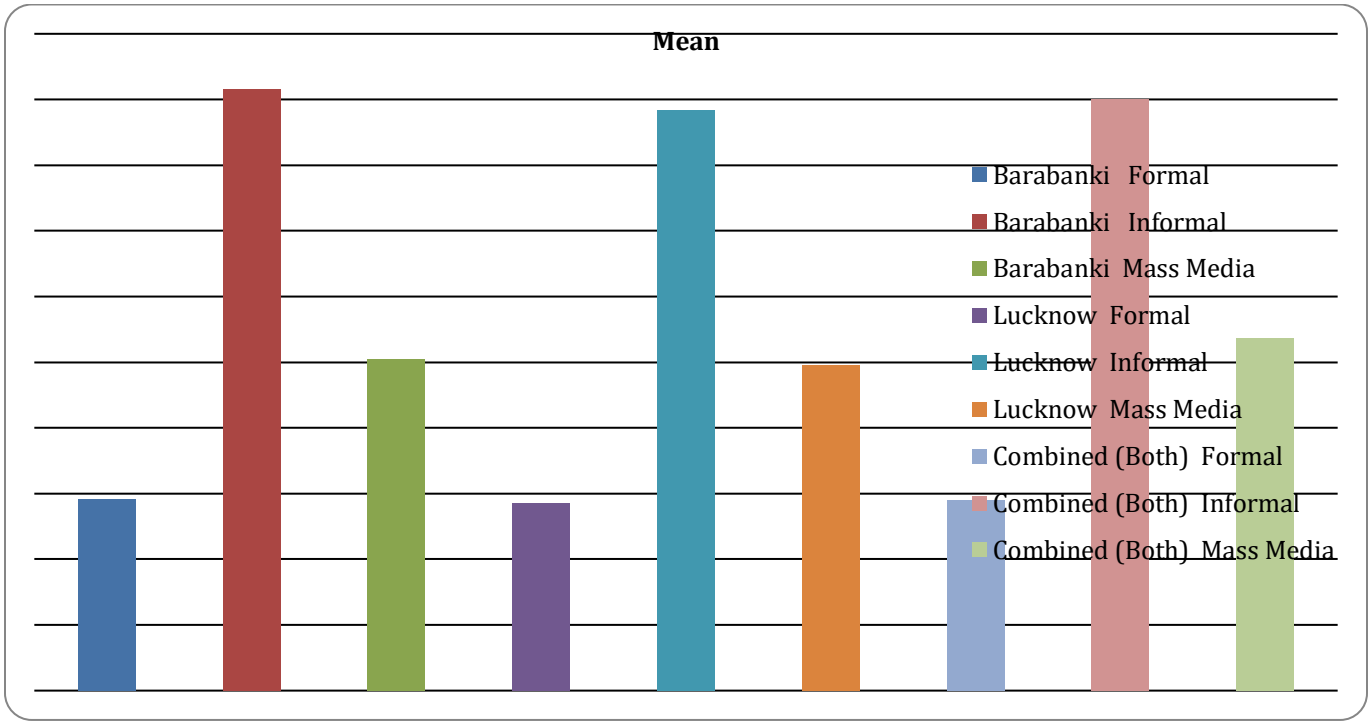
District	Mean	SD	CV (%)	Interpretation
Barabanki	1.46	1.30	88.97	Low Contact
Lucknow	1.43	1.23	85.18	Low Contact
Combined	1.45	1.26	87.08	Low Contact

2. Informal Sources of Communication

District	Mean	SD	CV (%)	Interpretation
Barabanki	4.58	2.15	46.87	High Contact
Lucknow	4.42	2.27	51.40	High Contact
Combined	4.50	2.21	49.13	High Contact

3. Mass Media Sources of Communication

District	Mean	SD	CV (%)	Interpretation
Barabanki	2.52	2.57	101.70	Moderate Exposure
Lucknow	2.48	2.61	92.01	Moderate Exposure



Institutional or formal linkages such as **Gram Pradhan**, **Agriculture Development Officer (ADO)**, and **Village Development Officer (VDO)** were found to have **very low interaction levels** among mentha growers in both districts.

The low mean values indicate weak institutional contact and limited participation in formal communication networks.

Lack of regular visits by extension officers and dependency on informal sources restricts farmers' exposure to scientific advisories.

Informal sources such as **progressive farmers, family members, neighbours, and local leaders** were the **most frequently used channels** of information among mentha growers.

Barabanki farmers exhibited slightly higher informal contact due to cooperative distillation units and group farming practices.

Such interpersonal interaction promotes peer learning and trust, helping in the rapid diffusion of mentha-related knowledge.

Among mass media, **television, radio, and mobile phones** were the **dominant sources** of agricultural information.

The increasing use of **smartphones** for accessing weather forecasts, pest advisories, and market prices reflects the growing importance of **digital communication tools**. Farmers are increasingly joining **social media groups** for sharing experiences and receiving timely feedback from extension agents and agribusiness companies (Das et al., 2025).

However, the use of **printed media** such as farm magazines and newspapers remained low, possibly due to literacy gaps and limited availability of locally relevant material (Lahiri & Mukhopadhyay, 2013). Extension agencies should thus focus on **mobile-based advisories, community radio**, and **audio-visual content** to improve outreach.

4. Behavioural Indices of Mentha Growers

Particular	Mean (%)	SD
Knowledge Index	79.79	15.36
Adoption Index	63.96	17.00
Communication Behaviour Index	64.91	10.75

The Communication Behaviour Index (CBI) of 64.91% indicates a medium level of communication exposure among mentha growers.

This shows that most respondents are capable of obtaining and sharing agricultural

information, though formal interaction remains limited.

A moderate adoption index also supports that awareness levels are high but adoption decisions depend on accessibility and resources..

5. Socio-economic Correlates of Communication Behaviour

Parameter	Barabanki (r)	Lucknow (r)	Overall (r)	Interpretation
Age	0.18	0.22	0.20	Low positive correlation — middle-aged farmers communicate moderately.
Education	0.71	0.76	0.74	High positive — educated farmers show better formal & media contact.
Landholding Size	0.48	0.52	0.50	Moderate positive — larger landholders have more extension contact.
Annual Income	0.66	0.70	0.68	High positive — higher income farmers are more exposed to agricultural information.

Occupation	0.46	0.49	0.48	Moderate positive — agriculture-dominant families communicate moderately.

A positive association was found between socio-economic variables and communication behaviour of mentha growers.

Education (r = 0.74) and income (r = 0.68) showed a strong correlation, indicating that literate and economically better farmers communicate more effectively.

Landholding (r = 0.50) and occupation (r = 0.48) had moderate relationships, reflecting that resource-rich and farm-oriented families maintain better contact with extension agencies.

Age (r = 0.20) indicated that middle-aged farmers were more communicative than younger or older ones.

Overall, socio-economic advancement enhances communication competence and information-seeking efficiency among mentha growers.

Discussion Summary

The study revealed that mentha growers in Barabanki and Lucknow districts exhibited a medium level of communication behaviour, characterized by active interpersonal interaction and moderate use of mass media. Informal sources such as progressive farmers, neighbours, and family members remained the most influential channels, whereas formal institutional contact with extension officials was found to be weak. The growing use of mobile phones and television highlights the shift toward digital information platforms, although printed media continue to play a minor role. Socio-economic variables such as education, income, and landholding size were found to be the major determinants of communication efficiency, indicating that better-off and educated farmers access and utilise agricultural information more effectively. Overall, strengthening extension linkages, promoting ICT-based advisory services, and enhancing training and awareness programmes can significantly improve the communication behaviour and adoption

capacity of mentha growers in central Uttar Pradesh.

HIGHLIGHTS

1. Informal sources of communication recorded the highest mean value (≈4.5) in both Barabank and Lucknow districts.

2. Formal channels showed the lowest mean score (≈1.45),indicating weak institutiona l interaction.

3. Mass media exposure was moderate (≈2.6), reflecting partial use of TV, radio, and mobile phones.

4. Overall, communication among mentha growers is dominated by interpersonal channels, while formal and media contact remain secondary.

CONCLUSION

The study concluded that mentha growers of Barabanki and Lucknow districts possessed a medium level of communication behaviour, with informal interpersonal channels playing the most dominant role in information sharing.

Formal sources such as agricultural officers and village leaders were underutilized, whereas mobile phones and television emerged as the most popular means of accessing agricultural information.

Education, income, and landholding size were found to be the key socio-economic determinants influencing farmers' communication efficiency.

To enhance effective information flow and adoption of improved mentha cultivation practices, it is essential to strengthen extension linkages, promote ICT-based advisory systems, and organise regular training and capacity-building programmes.

An integrated communication approach combining formal, informal, and digital sources will help bridge the research–practice gap and ensure the sustainable development of mentha cultivation in central Uttar Pradesh.

DECLARATIONS

Ethics approval and consent to participate:

The study was conducted following ethical research standards. Informed consent was obtained from all respondents before data

collection, and their participation was voluntary.

Consent for publication:

All participants were informed about the purpose of the study and provided consent for the publication of research findings in an academic journal.

Competing interests:

The author declares that there are no conflicts of interest regarding the publication of this article.

Availability of data and materials:

All data generated or analysed during this study are available with the corresponding author and can be provided upon reasonable request.

Authors' contribution:

The sole author was responsible for designing the study, collecting and analysing data, interpreting the findings, and preparing the manuscript.

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