

# E-EXTENSION

## Soil Health Card

Farmer/person ID		Field and soil sample information	
Name	Brajendra	Village	Khajur
District	Patna	State	Bihar
Soil Physical properties			
Texture	Sand		
Bulk density(g/cc)	1.4		
Soil pH	7.5		
Electrical conductivity(ds/m)	1.1		
SOC (%)	1.0	High	
SOM (%)	1.724	High	
Available Nitrogen(Kg/ha)	250	Low	
Available Phosphorus ( Kg/ha)	10		
Available potassium( Kg/ha)	100	Low	
Available Ca+ Mg(meq/100g)	10	High	
Available S (ppm)	5	Low	
Available Iron(ppm)	5		
Available Copper(ppm)	2	High	
Available Manganese(ppm)	2		
Available Zinc(ppm)	1	High	
Soil Respiration rate (kg CO2/ha/day)	20		
<b>Your soil quality rating is</b>		<b>Average</b>	
Print		Reset	Calculate



விவசாய அமைச்சு



## நெல்லில் தழைச்சத்து பற்றாக்குறை

### அறிகுறிகள்

- பயிர்கள் வளர்ச்சி குன்றி இருக்கும்
- அடி இலைகள் மஞ்சள் நிறமாக மாறும்
- வயல்வெளி முழுவதும் மஞ்சள் கலந்த பச்சை நிறமாக காட்சியளிக்கும்
- தூரகட்டுதல் குறைந்து காணப்படும்
- கதிரில் மணி பிடித்தல் குறைந்து விடும்

### நிவார்த்தி

எக்டருக்கு 330 கிலோ யூரியாவை பிரித்து மூன்று முறை(110 கிலோ/ஏக்கர்) என்ற அளவில் மண்ணில் இடவேண்டும். 10 கிராம் யூரியாவை 1 லிட்டர் நீள் கரைத்து 10 நாள் இடைவெளியில் அறிகுறிகள் மறையுமவரைத் தெளிக்கவேண்டும்.



## நெல்லில் மணிச்சத்து பற்றாக்குறை

### அறிகுறிகள்

- பயிர்கள் வளர்ச்சி குன்றியிருக்கும்
- தூரகட்டுதல் குறைந்துவிடும்
- இலைகள் கரும்பச்சை நிறமாக மாறி நெட்டுக்குத்தாக இருக்கும்



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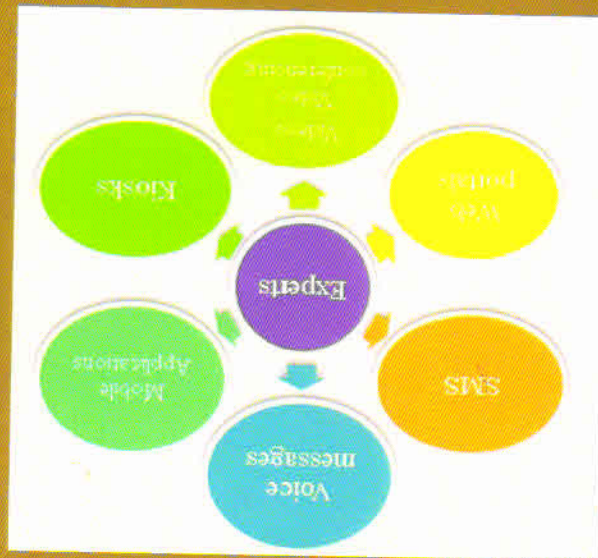
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# E-EXTENSION



## ROLE OF ICT IN SOLVING AGRICULTURAL PROBLEMS OF FARMERS OF GODDA DISTRICT

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### ABSTRACT

The advances in Information Communication and Technology (ICT) are poised to compliment extension efforts for transfer of technology. Farmers have specific information needs. The main focus of ICT in agriculture is meeting the farmers'needs for information. The present study was carried out in select Six villages of three blocks of Godda district of Jharkhand in 2020-21. A sample of 120 farmers was drawn from the complete list of households of selected villages through systematic random sampling technique. Market information including price updates of agricultural produce of surrounding districts on a daily basis. For farmers, the price updates of markets outside their villages have a higher priority so that they can compare the prices and choose to sell at the appropriate place. The main purpose of using all kind of

ICTs after sharing of information and news. As far as getting agricultural information through ICT is concerned, mobile phone and radio is significantly leading over TV and Internet which is because of its portability and operation friendly. It is because of speeding SMS services on mobile through KVK and allied sectors. The farmers depend on extension personnel to get the proper advice to cultivate the crop. The information needed may relate to different schemes, crops, technologies, seeds, fertilizers, pesticides, availability of fertilizers, seedlings, biopesticides, soil fertility, pest and disease diagnosis and many more. Mobile phone (74 per cent) was regarded as the most widely used ICT tool used for the purpose of marketing of produce. The findings of the study showed that farmers mostly used the mobile phones to communicate with the Senior Scientist, Subject Matter Specialist and farm manager for solving agricultural problems of GVT-Krishi Vigyan Kendra, Godda through the use of mobile phones and Whatsapp group from time to time. Print Media (Newspaper, Leaflet, Pamphlet and Booklet) (90 per cent) play a major role for enhances the knowledge of Agricultural Technology and package of practices. Agricultural marketing information is essential for farmers to increase their profits, Information such as price details of seeds, fertilizers, pesticides and availability of these products in the market enables the farmer to take decision in choosing right seed, fertilizer and pesticide required for the better farming. Vital information, that flows from the agricultural policy maker's desk, such as fixation of procurement price, procurement targets and policy relating to exports helps to farmers to get maximum profits.

**Key Words:** ICT, KVK, Agriculture, Market Information, Profit.

### **INTRODUCTION**

ICTs are technologies offering new ways for communicating and

## E-EXTENSION

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exchanging information and knowledge. The phrase ICT was coined by Stevenson in 1997. Information and Communication Technology (ICT) in Agriculture is emerging field focusing on the enhancement of agricultural and other development in India. The Agriculture sector is gearing itself to make optimal use of the new information and communication technologies. The diffusion of ICTs has contributed enormously to the growth of economies in developed nations and developing nations and is earnestly facilitating policy framework to ensure an equitable diffusion of new technologies. The information and communication support during last 50 years has mainly been conventional method. Earlier the extension personnel used to disseminate the technology/ message to farmers orally/ manually (Manty, 2011).

A new concept about agricultural informatics that has arisen following the rapid development in information and communication technologies (ICTs) and of the internet is referred as e-agriculture. The e-agriculture concept, however, goes beyond technology, to the integration of knowledge and culture, aimed at improving communication and learning processes among relevant actors in agriculture at different levels *i.e.*, locally, regionally and globally. The dissemination of information to farmers has become increasingly integrated into ICTs. ICTs are crucial in facilitating communication and access to information for agricultural and rural development.

Evening was the most preferred time for the use of radio, television, mobile and farm magazine by the farmers whereas newspaper was used in morning hours by the respondents. Mobile, farm magazine, newspaper and internet were mostly used for news and information whereas radio and television were used for entertainment. Regarding

extent of use of ICT tools farmers reported that mobile was the most used ICT tool. Regarding credibility of ICT tools Television got I rank followed by mobile (II rank). Thus, It can be say that various ICT tools are available and used by the farming community. KVKs may plan the information dissemination strategy through ICT tools. (Dube and Mishra, 2018).

Farm Publication is a class of publications prepared by the extension agency in printed form, containing information relating to the improvement of farm and home. Farm publications are of various types such as leaflet, folder, bulletin, newsletter, journal & magazine. Farm publications may be used singly or in combination with other extension methods. (Ray, 2011).

The collaboration of extension activities with ICT in recent decade like television, mobile phone, computer and digital networks had led unavoidable capacity for dissemination of information and knowledge gaining of the farmers. (Jyoti and Mishra, 2018).

The challenge before the agricultural scientists is to nourish the massive population by increasing per unit production in reducing cultivable land. To meet this challenge, we have to awake and mobilize the farmers for becoming information literate, more responsive towards cutting edge agricultural technologies. It can be realized by appropriate dissemination of timely and relevant information through various ICTs. Moreover, serious efforts are also requisite to recognize the existing ICT utilization behavior, pattern of the farming community for proper development and delivery of content for its effective use. Keeping in view the importance of ICTs in disseminating information among rural population, a research study was conceptualized to assess the existing

utilization pattern of Information Communication Technology (ICTs) among the farmers. (Yagya Dev Mishra and Reeta Mishra, 2016)

## METHODOLOGY

The present study was carried out in Select Six villages of three blocks of Godda district of Jharkhand. A sample of 120 farmers was drawn from the complete list of households of selected villages through systematic random sampling technique. The head of the families were interviewed thoroughly by using a well structured interview schedule consisting of the questions regarding utilization of Social media by farmers. The collected primary data were classified, tabulated and analyzed using simple statistical methods i.e. frequency and percentage.

## RESULTS AND DISCUSSION

### *Availability of different ICT Tools with Farmers*

Table 1 reveals that majority of farmers (91%) possess mobile phone. 83 per cent were having TV and 75 per cent were having the availability of newspaper. Percentage of farmers holding computer/laptop and internet and farm magazine were 58 and 41, respectively.

**Table 1: Availability of different ICT Tools with Farmers (N=120)**

S.No.	ICT Tools	Available	
		Frequency	Percentage
1.	TV	100	83
2.	Mobile	110	91
3.	Farm Magazine	50	41
4.	Newspaper	90	75

**E-EXTENSION**

5.	Computer /Laptop and Internet	70	58
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**Frequency of Utilization**

***Segment of the day spent on different ICT Tools Utilization by Farmers***

Table 2 shows that majority of farmers spent more of their morning time on newspaper ((90%)), farm magazine (71%) and computer/laptop (35%). In the evening hours (4-8 pm), majority of the respondents (77%) utilize mobile phones, while 46 per cent spent their time reading farm magazines. During night segment, 59 per cent watched TV.

***Table 2: Segment of the day spent on different ICT Tools Utilization by Farmers\****

**(N=120)**

S.No.	ICT Tools	Morning (6-12 Noon)	Afternoon (12-4 PM)	Evening (4-8 PM)	Night (After 8 PM)	Whenever required
1.	TV (N=115)	12(10)	22(19)	56 (48)	68(59)	20(17)
2.	Mobile (N=110)	28(25)	17(15)	85 (77)	13(11)	40(36)
3.	Farm Magazine (N=90)	64(71)	26(29)	41(46)	09(10)	13(14)
4.	Newspaper (N=105)	95 (90)	28(26)	34(32)	18(17)	42(40)
5.	Computer / Laptop and Internet (N=80)	28(35)	24(30)	32(40)	07(09)	20(25)

\*Multiple responses were allowed

**Purpose of Utilization**

The farmers use mobile phone mainly for sharing information with their family members and peer group where as television is preferred for news (Table 3). Internet is in very infant stage in terms of reach and mainly being accessed through mobile and cyber shops in the study area which is chosen for information sharing through e-mail, entertainment and on market and weather related information. Entertainment is the main purpose of using all kind of ICTs after sharing of information and news. As far as getting agricultural information through ICT is concerned, mobile phone and radio is significantly leading over TV and Internet which is because of its portability and operation friendly. It is be because of speeding SMS services on mobile through KVKs and other departments.

**Table 3: Purpose of ICT Tools Utilization by Farmers \***

(N=120)

S.No.	ICT Tools	News/Information		Entertainment		Education		Passing leisure time	
		F	%	F	%	F	%	F	%
1.	TV (N=110)	30	22	50	37	10	07	20	15
2.	Mobile (N=115)	65	56	45	39	30	26	15	13
3.	Farm Maga zine(N=90)	55	61	-	-	25	28	10	11
4.	Newspaper (N=113)	75	66	20	17	25	22	05	04

## E-EXTENSION

5.	Computer / Laptop and Internet (N=80)	50	63	15	19	05	06	10	13
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\*Multiple responses were allowed

It is observed from table 3 that computer/laptops, farm magazine and newspaper were used for information purpose by majority of farmers (63, 61 and 66 per cent, respectively). For entertainment purpose TV (37%) was used, while farm magazine were used more for education purpose.

### ***Extent of use of information sources by Farmers***

'Extent' is the degree to which an information source is used by the respondents. It shows the frequency of utilization. Table 4 shows that mobile is the most frequently used ICT tool With Weighted Mean Score (WMS) of 1.70 it was ranked first by the farmers. Newspaper is at the rank second with 1.54 WMS, while TV is at number third with 1.37 WMS. Farm magazine (1.25 ) and Computer/Laptop & internet (1.08) were ranked fourth and fifth respectively.

***Table 4: Extent of use of information sources by Farmers***

(N=120)

S.No.	ICT Tools	Extent of Use			Weighted Mean Score (WMS) and rank
		Always (Weight=2)	Sometimes (Weight=1)	Never (Weight=0)	
1.	TV(120)	70	25	25	1.37 (III)
2.	Mobile(120)	90	25	05	1.70 (I)

## E-EXTENSION

3.	Farm Magazine(120)	60	30	30	1.25 (IV)
4.	Newspaper(120)	75	35	10	1.54 (II)
5.	Computer / Laptop	50	30	40	1.08 (V)

### Effective use of Social media for solving agricultural problems

Table 5 reveals that utilization of ICT tools for availability of inputs was mainly through mobile (40 per cent) followed by T.V. Film Show Internet and Print Media. The findings of the study indicated that farmers preferred to watch the television programmes broadcasted through DD Kisan channel at 6:30 p.m. in free D2H via Doordarshan Kendra, New Delhi to gather information services on availability of inputs. For quality of inputs among the farmers, Internet had maximum usage (57 per cent). Mobile phones were also reported to be used by the farmers to contact experts/extension personnel to enquire about the recommended fertilizer dose in crops. Majority of farmers used Print Media for getting information on market price of inputs in which Newspaper, Leaflet, Pamphlet and Booklet (72 per cent). The reports on maximum usage of ICTs by the farmers were found to be the highest for marketing of the produce. Mobilephone (74 per cent) was regarded as the most widely used ICT tool used for the purpose of marketing of produce. The findings of the study showed that farmers mostly used the mobile phones to communicate with the Senior Scientist, Subject Matter Specialist and farm manager for solving agricultural problems of GVT- Krishi Vigyan Kendra, Godda through the use of mobile phones and Whatsapp group from time to time. Print Media (Newspaper, Leaflet, Pamphlet and Booklet) (90 per

S.No.	Particulars	Mobile (Per cent)	T.V. (Per cent)	Film Show (Per cent)	Internet (Per cent)	Print Media (Newspaper, Leaflet, Pamphlet andBooklet) (Per cent)	
1.	Availability of inputs	40.00	30.00	18.00	38.00	22.00	
2.	Quality of inputs	48.00	27.00	38.00	57.00	53.00	
3.	Market price of inputs	57.00	64.00	45.00	68.00	72.00	
4.	Marketing of produce	74.00	53.00	50.00	70.00	64.00	
5.	Pest and disease management of commercial crops:						
	Pulse, Paddy, Cole crops, Potato	80.00	62.00	55.00	77.00	87.00	
6.	Soil Test	45.00	55.00	80.00	70.00	90.00	
7.	Vermi-composting	72.00	68.00	57.00	74.00	82.00	
8.	Postharvest management	64.00	50.00	70.00	78.00	68.00	
9.	Water harvesting	64.00	70.00	72.00	45.00	80.00	
10.	Transplanting	68.00	53.00	87.00	72.00	94.00	

Table 5. Purpose of usage of ICTs in agriculture\* (N=120)

Technology and package of practices. cent) play a major role for enhances the knowledge of Agricultural

E-EXTENSION

The conclusion of accessibility of ICT television, film sh were also regarded to other ICTs. The most frequently us affordable and co areas where ICT services on availa Matter Specialist a pest and diseas vegetables, and showed that farme with the Senior Sc for solving agricu through the use o time. Print Media cent) play a maj

CONCLUSION

\*Multiple response

11.	Integrated Farming systems	14
12.	Multi-layer Vegetable Technology	13
13.	Micro Irrigation	14
14.	Animal Husbandry	

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**Table 5. Purpose of usage of ICTs in agriculture\* (N=120)**

S.No.	Particulars	ICT tools				
		Mobile (Per cent)	T.V. (Per cent)	Film Show (Per cent)	Internet (Per cent)	Print Media (Newspaper, Leaflet, Pamphlet andBooklet) (Per cent)
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2.	Quality of inputs	48.00	27.00	38.00	57.00	53.00
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6.	Soil Test	45.00	55.00	80.00	70.00	90.00
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10.	Transplanting	68.00	53.00	87.00	72.00	94.00

### E-EXTENSION

11.	Integrated Farming systems	70.00	68.00	74.00	80.00	83.00
12.	Multilayer Vegetable Technology	80.00	64.00	78.00	83.00	90.00
13.	Micro Irrigation	64.00	70.00	83.00	77.00	80.00
14.	Animal Husbandry	72.00	57.00	82.00	80.00	87.00

\*Multiple responses were allowed

### CONCLUSION

The conclusion of this study revealed that the level of availability and accessibility of ICTs was the highest for mobile phones followed by television, film show and print media respectively. Mobile phones were also regarded as the most frequently used ICT tool as compared to other ICTs. The reason mobile phones was highly accessed and most frequently used by majority of the respondents is that it is easily affordable and could be easily used by even illiterate farmers. The areas where ICTs are widely used in agriculture is information services on availability of inputs, quality of inputs, contacting Subject Matter Specialist and extension personnels for marketing of produce, pest and disease management of cereals, pulses, oilseeds, vegetables. and market price of inputs. The findings of the study showed that farmers mostly used the mobile phones to communicate with the Senior Scientist, Subject Matter Specialist and farm manager for solving agricultural problems of GVT-Krishi Vigyan Kendra, Godda through the use of mobile phones and Whatsapp group from time to time. Print Media (Newspaper, Leaflet, Pamphlet and Booklet) (90 per cent) play a major role for enhances the knowledge of Agricultural

Technology and package of practices. Since there is an increased penetration in the level of availability and accessibility of ICTs among the farmers of the state, there is a need to ensure that the problems of the farmers are being met in order to enable the farming community derive maximum benefits on better access to information services through the use of ICTs for agriculture and other developmental purposes.

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