ISSN Print: 2664-844X
ISSN Online: 2664-8458
NAAS Rating (2025): 4.97
IJAFS 2025; 7(8): 1274-1282
www.agriculturaljournals.com
Received: 22-06-2025
Accepted: 25-07-2025

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Post-COVID Evaluation of YouTube ('Agropradhan') as a Digital Extension Medium for Agricultural Information Dissemination: Insights from a Multi-Regional Farmer Audience

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DOI: https://www.doi.org/10.33545/2664844X.2025.v7.i8l.702

Abstract
The present study, "Post-COVID Evaluation of YouTube ('Agropradhan') as a Digital Extension Medium for Agricultural Information Dissemination: Insights from a Multi-Regional Farmer Audience", conducted from 2021 to 2024, assessed the effectiveness of YouTube-based extension in delivering pest and disease management practices. A total of 112 problem base agriculture extension videos average (2–7 min duration) were uploaded, primarily from Oney village of Nashik district, Maharashtra, yet viewership extended across multiple Districts of Maharashtra. YouTube Analytics revealed a cumulative 347,464 views, 21,724 watch hours, and significant subscriber growth. High-impact topics such as Geranium cultivation (46,381 views, CTR 8.94%) and Mealy bug control (CTR 10.70%) demonstrated that problem-specific, visually demonstrated content achieved superior engagement and adoption. Pest and disease management videos consistently outperformed general agronomy topics in both CTR and audience retention. Post-distribution farmer surveys indicated notable adoption of recommended pest control measures, with respondents citing improved awareness, timely interventions, and reduced crop losses. The study highlights YouTube's capability to bridge advisory gaps in the post-COVID period, demonstrating that concise, locally relevant, and visually rich content can significantly enhance digital agricultural extension reach and impact.

Keywords: YouTube extension, Agropradhan, digital agricultural extension, post - COVID agriculture, pest management videos, disease management, farmer adoption, click-through rate (CTR), audience retention, Marathi agricultural content, Nashik district, problem-specific advisories, visual demonstrations, online farmer engagement

Introduction
Agriculture remains a central pillar of India's economy. According to the 2011 Census, approximately 54.6% of the workforce is engaged in agriculture and allied activities, contributing 17.4% to Gross Value Added (GVA) in 2014–15 (Department of Agriculture & Farmers Welfare [DAFW], 2024–25) [4]. More recent estimates show that the agriculture and allied sectors contribute about 18.3% to India's GDP in 2022–23, while employing nearly 45% of the population (Press Information Bureau [PIB], 2023) [9]. Despite its importance, Indian agriculture remains vulnerable to climatic uncertainties due to its heavy dependence on the monsoon. In addition to weather-related risks, pests and diseases cause substantial economic losses. A CARE Ratings study reported to the Indian Parliament estimated that pests alone reduce crop yields by about 18% annually, resulting in losses worth approximately 90,000 cr., with impacts varying from 10% to 30% depending on severity and region (CARE Ratings, 2009) [3]. Scientific assessments further indicate that combined biotic stresses—including weeds, insect pests, and diseases—can cause up to 33% yield reduction, with weeds responsible for 12.5%, insect pests for 9.5%, diseases for 6.5%, and other pests for 4.5% (Ghosh, Bandopadhyay, Mondal, & Ghosh, 2015) [6]. Globally, the Food and Agriculture Organization (FAO) estimates that plant pests and diseases are responsible for up to 40% of crop losses annually, with diseases alone causing around 10% loss in developed countries and over 20% in developing countries (FAO 2025, Wikipedia, 2025) [5]. Given these losses, timely and accurate advisory services are critical to minimizing damage and improving productivity. While traditional extension services have been the backbone of

agricultural knowledge dissemination, the rise of digital technologies is transforming the sector enabling location-specific, real-time recommendations for pest, disease, and agronomic management. Initiatives by agricultural scientists and postgraduate students, such as Agropradhan, have demonstrated the utility of platforms like YouTube for delivering plant protection, entomology knowledge, and agronomic advice. These tools not only extend the reach of expert guidance but also enable interactive problem-solving with farmers.

Methodology

The study adopted a mixed-method, pre–post evaluation design to assess the effectiveness of YouTube as a digital extension tool for disseminating pest and disease management information to farmers in the post-COVID period (Patel and Mehta, 2022; Singh and Kaur, 2021) [8]. Short videos of 2–7 minutes duration, produced in the local Marathi language, were created and uploaded on the YouTube channel Agropradhan.[1] These videos covered major pests, disease symptoms, and recommended control measures specifically for crops such as grapes, sugarcane, and tomato. The study was conducted in the Nashik district, particularly in the Oney village of Niphad tahasil of Maharashtra State, during the period from 2021 to 2024. YouTube Analytics served as the primary measurement tool, tracking key metrics such as total views, unique viewers, average view duration, watch time, audience retention, click-through rate, engagement (likes, comments, shares), and subscriber changes over a 30-day period after each upload (Google, 2023) [7]. Additional engagement statistics and adoption levels were captured through a post-survey, which recorded adoption of the shared practices, farmers' satisfaction, and challenges faced while using these digital media platforms (Babu *et al.* 2021) [2].

To administer this post-survey, farmers were provided with Google Form links directly in the video description, comment box, and community posts of the YouTube channel. Through this form, they were specifically asked which videos they found most useful, whether they had adopted the recommended pest and disease management practices, and their level of satisfaction with the information provided. The farmers responded mainly in "Yes/No" format, and their feedback offered valuable insights into adoption patterns and practical challenges.

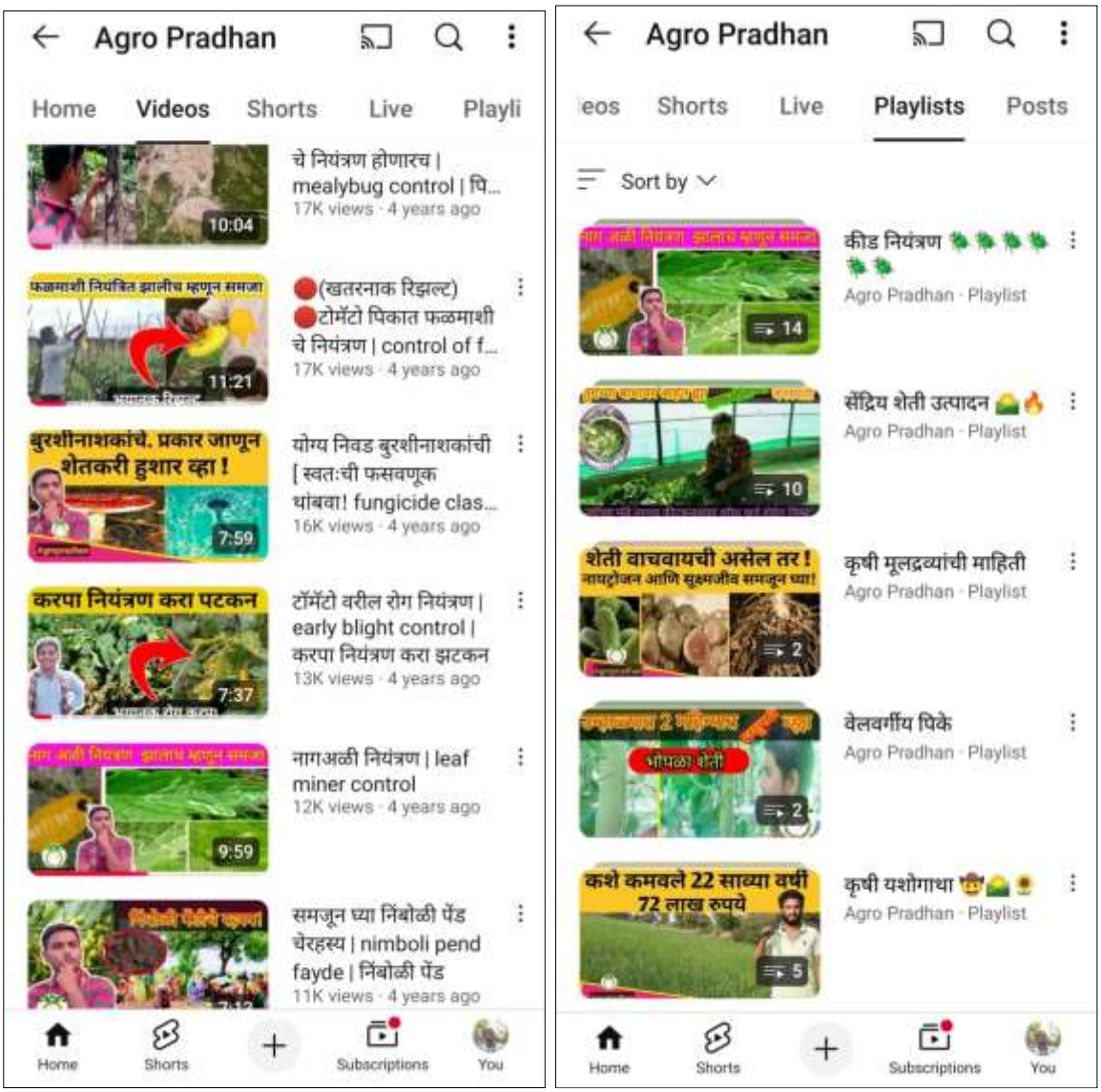

Fig 1: Playlist of scientific and problem oriented videos.

Results and Discussions

Analysis of YouTube analytics for 112 agricultural advisory videos during the study period revealed clear variations in viewership, engagement, and audience response. Collectively, these videos accumulated 347,464 total views and 21,724.03 hours of watch time. The highest audience reach was recorded by the video (Earning millions from geranium farming – special interview with young Nashik farmer-entrepreneur Chandrashekhar Labhade), which achieved 46,381 views and 5,416.79 hours of watch time. This was followed by (Solution for onion bulbing – special spray – (cell division in onions)) with 40,164 views, and Become a millionaire in 2 months during summer Ridge gourd cultivation information with 37,105 views. These patterns indicate that farmers demonstrated a stronger inclination toward content offering direct economic benefits and high-value crop guidance. Engagement metrics—including subscriber gains, impressions, and click-through rate (CTR)—varied substantially among topics. The maximum subscriber gain was observed for the Geranium cultivation video (+1,463 subscribers), followed Solution for onion bulbing – special spray – (cell division in onions (+1,232 subscribers). CTR values ranged from below 2% for generic topics to above 10% for pest-specific, concise instructional videos such as Mealybug
control (10.70%) and Benefits of Mulching (10.12%). This aligns with earlier findings (FAO, 2020) [5] that concise, problem-oriented content draws higher attention and responsiveness from farming audiences.

Fig 2: Pest-specific, concise instructional videos of Mealybug Control.

Videos addressing pest and disease management issues—such as Thrips, Fruit fly, *Tuta absoluta*, and Early blight—consistently achieved higher CTR and stronger audience retention than those focusing on general crop production practices. Locally narrated and demonstration-based videos, including Mealybug control and Leaf miner control, showed superior retention, underscoring the effectiveness of practical, visually demonstrative approaches for farmer learning. Notably, videos that integrated economic case studies with actionable recommendations—for example, Geranium farming and Measures for Onion Bulbing not only attracted high viewer numbers but also maintained prolonged audience engagement. In contrast, short videos with minimal contextual depth, such as basic machinery introductions, tended to register lower watch times, highlighting the significance of narrative clarity and explanatory depth in agricultural advisories.

The analytics further emphasize that impactful digital extension is achieved when content is: (1) delivered in the local language, (2) focused on urgent and high-impact crop protection topics, (3) of short-to-moderate duration average (2–7 minutes), and (4) supported by visual demonstrations and farmer success stories. These observations are consistent with Patel and Mehta (2022) and Babu *et al.* (2021) [8], who reported that targeted, locally relevant, and concise advisory materials significantly improve the likelihood of adoption by rural farming communities. The strong performance of pest- and disease-specific videos also suggests that aligning topics with seasonal crop challenges enhances engagement and adoption. The integration of such content within a multi-platform extension strategy, complemented by rapid communication tools could enhance the reach, timeliness, and impact of agricultural advisories. Strategic planning in line with crop growth stages and emerging pest/disease threats can further strengthen these outcomes. In addition to YouTube Analytics, farmer-level adoption data was systematically collected through a Google Form–based post-survey. A total of 500 farmers completed the form, which was distributed via video descriptions, comment sections, and community posts. The survey responses provided valuable quantitative insights: approximately 68% of farmers reported adopting at least one recommended pest or disease management practice after watching the videos; 22% partially adopted or modified the practices to suit their farm conditions, while 10% reported non-adoption, mainly due to resource constraints. Notably, pest-specific advisories such as Thrips and Mealybug control registered the highest adoption rates (above 70%), whereas general crop production and machinery-related advisories remained lower (below 40%). These statistical trends validate the analytics findings and highlight that concise, contextually relevant, and demonstration-driven videos are not only effective in engaging farmers but also in driving measurable behavioral adoption at the field level.

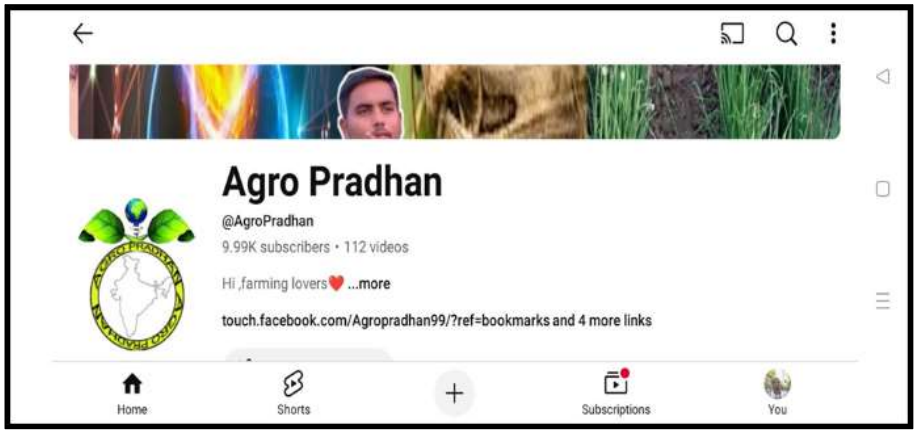

Fig 3: Agropradhan Youtub Channel Digital Page

Table 1: Performance metrics of all agricultural advisory videos uploaded during the study period

Content	Video title	Video title (English)	Video publish time	Duration	Views	Watch time (hours)	Subscribers	Impressions	Impressions click-through rate (%)
Total					**347464**	**21724.03**	**9981**	**4009300**	**6.03**
1	Agropradhan is solution for farm problems	Agropradhan – A solution for farm problems	7-Feb-21	389	725	14.1004	60	2481	9.23
2	POTASH FERTILIZER । fertilizer potash ka upyog। पलाश का उपयोग।NPK potash ।	Potash Fertilizer – Use of potash fertilizer – Application of potash – NPK potash	8-Feb-21	703	861	32.4991	29	20789	2.71
3	गजब की अंगूर की खेती|grapes farming|famous grapes|angur ki kheti	Amazing grape cultivation – grape farming – famous grapes – grape cultivation	9-Feb-21	1006	991	42.2186	15	28539	2.31
4	हे केल्यावर कांद्यावरील थ्रिप्सचे कंट्रोल होणारच!कांदा thrips नियंत्रण| फवारणी नियोजन	After doing this, onion thrips will definitely be controlled – onion thrips control – spray schedule	13-Feb-21	528	1133	64.7592	41	8741	4.63
5	द्राक्ष बागेत वाफसा कंडीशन आण्यासाठी केलेली मशागत	Tillage operations in vineyards to create soil moisture condition (Vapsa)	18-Feb-21	64	544	5.2844	2	4659	9.83
6	जिरेनियम च्या शेतीतून लाखोंची उलाढाल, नाशिक चे तरुण शेतकरी उद्योजक चंद्रशेखर लभडे यांची खास चर्चा|	Earning millions from geranium farming – special interview with young Nashik farmer-entrepreneur Chandrashekhar Labhade	20-Feb-21	1825	46381	5416.787	1463	724295	4.03
7	३५ हजाराची नोकरी सोडूनकृषिपर्यटनाद्वरे विकाससाधणारानाशिकचाअवलिया शेतकरी |diligencefarm| नाशिक पर्यटन	Nashik farmer leaves a ₹35,000 job to develop agritourism – diligence farm – Nashik tourism	24-Feb-21	1061	1712	109.3743	46	14989	3.98
8	मलचींग चे फायदे! मल्चिंग	Benefits of mulching – Mulching	26-Feb-21	520	2647	116.0273	29	19864	10.12
9	उन्हाळी कांदा खत व्यवस्थापन / Rabbi kanda khat niyogen / रब्बी कांदा खत नियोजन..	Summer onion fertilizer management – Rabbi onion fertilizer schedule	27-Feb-21	656	5249	361.2232	162	56145	6.4
10	टरबूज नर्सरी	Watermelon nursery	27-Feb-21	17	20	0.0718	0	287	3.83
11	उन्हाळ्यात 2 महिन्यात लखुपती व्हा| dudi bhopla lagwad mahiti	Become a millionaire in 2 months during summer – bottle gourd cultivation information	2-Mar-21	439	37105	1579.397	571	336317	9.59
12	लाखोंचे उत्पादन देणारे कलिंगड ?कलिंगड लागवड माहिती | Kalingad Lagwad टरबुज लागवड माहिती	Watermelon producing millions – watermelon cultivation information	4-Mar-21	261	500	15.6206	16	11134	2.12
13	गव्हाची मशीन नवीन आली|शेतकऱ्याची नवीन IDEAबघा ! गहू HARWESTING मशिन |wheat harvesting machine|	New wheat harvesting machine – innovative farmer's idea	6-Mar-21	410	2672	103.6964	56	24859	5.05
14	कांदा | २२ व्यां वर्षी ७२ लाख कांदा शेतीतून| #shorts| कांदा बाजार भाव | kanda	Onion – 72 lakh turnover from onion farming at the age of 22 – #shorts – onion market rates	11-Mar-21	32	1388	7.1367	30	14522	1.91
15	कांदा बाजार भाव | अवघ्या २२ व्या वर्षी कांदा शेतीतून 72 लाखाची उलाढाल करणारा युवा शेतकर	Onion market rates – 72 lakh turnover from onion farming at the age of 22	12-Mar-21	931	1642	96.6413	36	10734	4.49

16	योग्य निवड बुरशीनाशकांची [स्वतःची फसवणूक थांबवा! fungicide classification	Right choice of fungicides – stop self-deception – fungicide classification	18-Mar-21	479	16096	1049.923	866	160136	6.08
17	grapes ploat. agropradhan draksh agriculture #short #youtubeshorts	Grape plot – Agropradhan – grape farming – #shorts	21-Mar-21	51	324	2.2875	4	6356	2
18	ऊस चापट गोळा करणारे मशिन #shorts	Sugarcane leaf gathering machine – #shorts	22-Mar-21	33	11	0.0585	0	34	14.71
19	Kanda fugnyasathi upay | कांदा फुगवणीवर रामबाण उपाय | स्पेशल फवारणी(शेतकऱ्यांनो कांदा पेशी विभाजन)	Solution for onion bulbing – special spray – (cell division in onions)	22-Mar-21	517	40164	2440.762	1232	589033	5.19
20	फॉस्फरस पिकासाठी किती महत्त्वाचा?|Phosphorus importance in plant|npk|जाणून घ्या फॉस्फरस चे महत्व|	Importance of phosphorus in crops – NPK – understanding phosphorus importance	26-Mar-21	376	1422	65.6383	76	8700	6.08
21	झटपट कांद्याला पाणी #shorts	Quick watering to onions – #shorts	28-Mar-21	13	689	2.3669	2	2767	3.14
22	कावळा आला द्राक्ष खायला #shorts || #youtubeshorts	Crow came to eat grapes – #shorts	29-Mar-21	34	467	2.0451	1	3226	2.17
23	रंगीत फ्लॉवर, गुलाबी कमाई #shorts || #youtubeshorts	Coloured cauliflower, rosy income – #shorts	30-Mar-21	26	221	1.1154	2	3177	2.17
24	Cauliflower farming |रंगीत फ्लॉवर 2महिन्यात भरघोस उत्पन्न| फुलकोबी लागवड माहिती	Cauliflower farming – coloured cauliflower in 2 months – cultivation information	31-Mar-21	1178	1863	98.3937	74	17542	4.11
25	या द्राक्ष खायला #shorts | #youtubeshorts	Grapes to eat – #shorts	4-Apr-21	45	223	1.2182	0	2937	1.74
26	milibug Attack |#shorts | Youtubeshorts	Mealybug attack – #shorts	4-Apr-21	57	163	0.828	0	2498	1.48
27	द्राक्ष thripes attack |#shorts | #youtubeshorts	Thrips attack in grapes – #shorts	5-Apr-21	33	291	1.6869	0	6140	1.27
28	नत्र स्पुरद पलाश! नायट्रोजन पिकांना किती महत्वाचा समजून घेऊ	Nitrogen, phosphorus, potash – understanding nitrogen's importance in crops	11-Apr-21	645	786	48.8643	24	8675	4.29
29	असा बनवा सर्वात असरदार दशपर्णी अर्क|Dashparni ark | दशपर्णी अर्क निर्माण विधी	Making the most effective Dashparni ark – preparation method	28-May-21	780	1330	90.6568	36	12889	4.19
30	कॅल्शियम म्हणजे पिकाचे शक्ती केंद्र | calcium nitrate |calcium nitrate fertilizer	Calcium is the power centre of plants – calcium nitrate fertilizer	6-Jun-21	472	1188	64.6713	56	15588	3.47
31	फक्त 20 रुपयात वाढवा जमिनीतील सूक्ष्मजीव Weste decomposer | Weste decomposer | वेस्ट डीकंपोजर	Increase soil microorganisms for just ₹20 – waste decomposer	16-Jun-21	389	1357	64.746	49	9910	5.93
32	ट्रायकोडर्मा चे हे फायदे तुम्हाला कोणीच सांगितले नसतील |Traycoderma uses in agriculture	Benefits of Trichoderma that no one told you – uses in agriculture	26-Jun-21	635	7498	522.6019	280	73663	6.39
33	समजून घ्या निंबोळी पेंड चेरहस्य | nimboli pend fayde | निंबोळी पेंड	Secrets of neem cake – benefits – neem cake	29-Jun-21	433	11074	555.0578	312	113611	7.43
34	#great mulching	#Great mulching	2-Jul-21	15	454	1.5247	0	10172	1.53
35	अशा पद्धतीने मिलिबग चे नियंत्रण होणारच | mealybug control | पिठ्या ढेकूण	Guaranteed mealybug control – mealybug management	5-Jul-21	604	17796	1130.28	687	132330	10.7
36	शेतकऱ्यांसाठी अति उपयुक्त सुडोमोनास जीवानुचा रोग नियंत्रणासाठी वापार | pseudomonas चा वापर.	Use of beneficial bacteria Pseudomonas for disease control	10-Jul-21	634	2629	172.9177	136	24700	6.15
37	नागअळी नियंत्रण | leaf miner control	Leaf miner control	18-Jul-21	599	12664	818.0756	573	114314	8.27
38	tomato वाढ	Tomato growth	23-Jul-21	16	429	1.8055	2	5861	2.12
39	बीज प्रक्रिया | seed treatment| शुद्ध बिजा पोटी फळे रसाळ गोमटी	Seed treatment – pure seed results in juicy, tasty fruits	23-Jul-21	485	408	12.6084	13	6384	1.72
40	टॉमॅटो वरील रोग नियंत्रण |early blight control | करपा नियंत्रण करा झटकन	Early blight control in tomato – quick management	30-Jul-21	457	13524	706.8621	635	127934	8.02
41	टोमॅटो वरील लष्करी अळी चे हमखास नियंत्रण | helicoverpa armygera control	Guaranteed control of tomato fruit borer (Helicoverpa armigera)	3-Aug-21	588	3730	204.3492	67	36012	7.14
42	मायकोरायझा बुरशी | mycorrhiza fungi bio	Mycorrhizal fungi – biofertilizer (watch only if	8-Aug-21	516	2824	151.0352	100	31793	5.94

	fertilizer	(फायदा करायचा असेल तरच व्हिडिओ बघा)	you want benefits)						
43	(खतरनाक रिझल्ट) टोमॅटो पिकात फळमाशी चे नियंत्रण | control of fruit fly |	Dangerous result – fruit fly control in tomato	14-Aug-21	681	17645	891.1282	344	161280	9.33
44	जिवामृत निर्मिती कशी (वैज्ञानिक पद्धत) करावी | jiwamrut nirmiti |असरदार जीवामृत | भाग -१	How to prepare Jeevamrut (scientific method) – Part 1	2-Sep-21	655	1507	88.5418	51	9682	3.48
45	जिवामृत निर्मिती कशी (वैज्ञानिक पद्धत) करावी | jiwamrut nirmiti |असरदार जीवामृत | भाग -२	How to prepare Jeevamrut – Part 2	10-Sep-21	579	508	24.3878	2	6887	4.25
46	पांढरी माशी नियंत्रण जैविक, रासायनिक पद्धत अगदी सोप्पी |white fly controll !ampligo #कापूस #टोमॅटो	Whitefly control – biological and chemical methods – easy	14-Sep-21	697	3728	205.7076	47	40252	5.78
47	पिकांवरील विषाणू नियंत्रण ! # टॉमॅटो	Virus control in crops – #tomato	20-Sep-21	505	1041	55.0811	11	8894	4.99
48	टोमॅटो खड्डे #shorts	Tomato pits – # shorts	23-Sep-21	15	219	0.8619	0	2658	3.16
49	मावा आणि मुंग्यांची दोस्ती –पण वांग्याचं काम तमाम	Friendship between aphids and ants - but disaster for brinjal	23-Sep-21	52	1263	4.6618	0	4079	1.62
50	youtub shorts #shorts	YouTube shorts – #shorts	25-Sep-21	15	732	2.1689	2	5082	0.89
51	रेल्वे इंजिन #youtubshort #youtub	Railway engine – #shorts	26-Sep-21	27	181	1.0852	1	4435	2.62
52	सल्फर मुळे कांदा पिकाला खरच फायदा होतो का / कांदा पिकासाठी सल्फर चा उपयोग /sulpher use i agriculture	Does sulphur really benefit onion crops? – sulphur use in agriculture	29-Sep-21	668	800	47.5346	13	11618	3.31
53	काम करी दाम #farmer #shetkari	Work brings rewards – #farmer #shetkari	7-Oct-21	16	487	1.8418	0	8031	2.59
54	द्राक्ष पिकावरील डावनि नियंत्रण |dawny mildew	Downy mildew control in grapes	23-Oct-21	31	61	0.4102	0	2741	1.2
55	लष्करी अळी #youtubshort	Armyworm – #shorts	24-Oct-21	30	68	0.4526	0	2653	1.51
56	उडद्या नियंत्रण	Black gram pest control	25-Oct-21	31	171	1.0594	4	3589	2.65
57	मावा नियंत्रण	Aphid control	26-Oct-21	35	121	0.9565	1	3097	2.87
58	कांदा रोपाला पीळ पडणे उपाय / कांदा रोप आडवे पडणे उपाय / kanda rop pil rog / kanda pil rog upay	Onion seedling bending and twisting – control measures	27-Oct-21	22	217	1.1629	2	6005	1.95
59	जैविक बुरशी व्हर्टीसेलियम | बेव्हिरियाना यांचा कांदा द्राक्ष पिकांमध्ये वापर कसा करावा.	Biological fungi Verticillium and Beauveria use in onion and grapes	29-Oct-21	551	744	36.7276	16	13298	3.2
60	हुमनी अळी नियंत्रण	White grub control	11-Nov-21	31	240	1.301	-1	10768	1.31
61	डाऊनी चे विज्ञान | समजून घेणे तितकेच महत्वाचे |dawny control ||डाऊनी नियंत्रण ||	Science of downy mildew – importance of understanding – control methods	30-Nov-21	712	1474	85.0448	29	13890	5.68
62	बदलत्या हवामानात शेतकऱ्यांची चर्चा	Discussion with farmers in changing climate	2-Dec-21	420	232	5.4864	3	4660	2.85
63	शेतकरी सर्व काही करू शकतो	A farmer can do everything	3-Dec-21	60	282	2.3302	1	6863	1.24
64	thripes controll | द्राक्ष बागेतील फुलकिडे नियंत्रण	Thrips control in grapes	12-Dec-21	698	540	33.5807	13	8859	2.52
65	कांद्यावर पिळ पडणे | कांद्यावर वाकड्या पडणे | कांदा पीळ रोग नियंत्रण /dhuke kanda	Onion splitting/twisting – control measures	2-Jan-22	506	891	47.7183	26	11687	3.16
66	कांदा पिकातील करपा नियंत्रण / kanda Shende piwale padane	Purple blotch disease control in onion	9-Jan-22	200	577	15.041	3	8464	2.81
67	गहू पिकावरील मावा कीटक species (Rhopalosiphum maidis)	Aphid species in wheat (Rhopalosiphum maidis)	11-Jan-22	16	758	2.4113	0	3987	1.48
68	कांदा पिकासाठी खत व्यवस्थापन /kanda khat niyogen/कांदा फुगवण्यासाठी कोणते औषध वापरावे.	Fertilizer management for onions – bulbing stage	13-Jan-22	385	754	30.3869	20	10957	3.1
69	मित्र कीटक leday bird beetal	Beneficial insect – ladybird beetle	15-Jan-22	18	523	1.9856	1	8188	1.69

70	#farmerarmy ganna king	#FarmerArmy – Sugarcane King	19-Jan-22	31	108	0.6793	0	3770	1.75
71	ESS MACHINE	ESS Machine	23-Jan-22	16	916	3.438	1	4795	2.34
72	वखरणी	Ploughing (Vakrani)	23-Jan-22	15	598	2.2856	0	4645	1.03
73	कांदा पिकातील करपा नियंत्रण /kanda Shende pivle padne upay	Purple blotch control in onion – solution	25-Jan-22	532	546	29.8285	16	6559	2.62
74	#kandavyavstapan/ #short/ #kanda	OnionManagement – #shorts	25-Jan-22	15	143	0.5087	0	3597	2.7
75	ESS SPREY MACHINE INTRODUCTION	ESS Spray Machine Introduction	27-Jan-22	458	2744	106.7999	34	26009	8.1
76	टोमॅटो पिकाची फुगवण करा	Onion swelling in tomato plants	2-Feb-22	427	922	45.1086	24	11771	2.4
77	काळया आईची लेकर#शेतकरी राजा	Kalaya Aai's calf – #shetkari raja	10-Feb-22	16	544	1.9341	1	3125	1.57
78	ऊस पिकाची मोठी बांधणी	Sugarcane bund formation	15-Feb-22	392	96	1.3348	0	3053	1.41
79	कांदा पीक रोग नियंत्रण |🌾कांदा पिकास नाग अळी आणि रोगाचे सावट 🌾	Onion pest and disease control	17-Feb-22	305	452	17.727	11	6723	3.73
80	असा वाढवा जमिनीतील सेंद्रीय कर्ब!	Increase organic carbon in soil	18-Feb-22	841	20581	1781.074	634	248319	6.85
81	असिड रिएक्शन	Acid reaction	24-Feb-22	16	315	1.4155	0	5334	2.92
82	तुटा अब्सुलूटा /tuta absuluta controll	*Tuta absoluta* control	7-Mar-22	61	648	7.2159	0	7303	5.55
83	जागतिक महिला दिननिमित्त हार्दिक शुभेच्छा । women's day status	International Women's Day greetings – women's day status	8-Mar-22	21	51	0.1777	0	3023	0.33
84	9-Mar-22		9-Mar-22	16	101	0.2877	0	4916	0.77
85	maize jasside	Maize jassid pest	9-Mar-22	16	164	0.5432	0	8675	0.9
86	तुटा अब्सुलूटा /tuta absuluta controll /नागअळी नियंत्रण / leaf minor controll	*Tuta absoluta* control / Leaf miner control	18-Mar-22	768	19114	1333.345	616	217914	7.42
87	कांदा पिकातील शेवटचे नियोजन/कांदा पीक माहिती	Final onion crop planning	1-Apr-22	643	634	39.2454	3	11607	2.86
88	हुमणी अळी नियंत्रण ! याच काळात करू शकतो हुमणीच्या किडीचे आपण नियंत्रण! सावध व्हा नियोजन करा	White grub control – timely management	3-May-22	803	884	42.901	12	11002	4.96
89	ऊस पिकावरील लोकरी मावा नियंत्रण	Woolly aphid control in sugarcane	12-Jun-22	379	853	34.3078	5	12635	5.64
90	biological controll of aphis	Biological control of aphids	18-Jun-22	25	216	1.2335	1	4686	2.86
91	टोमॅटो पिकाला जोरदार फुटवा फुलकळी फळधारणा लागण्यासाठी उपाय # टोमॅटोफुलसेटिंगफळसेटिंग #Tomatofutva	Increase flowering and fruit set in tomato	6-Jul-22	476	1653	66.6606	35	20460	6
92	टोमॅटो वरील करपा आणि लष्करी अळी नियंत्रण / प्रसाद आव्हाड सोबत👍	Tomato blight and fruit borer control – with Prasad Avhad	23-Jul-22	279	602	19.8023	12	6795	4.55
93	स्पोडोपटेरा अळी आणि नाग अळी ची ओळख	Spodoptera and leaf miner pest identification	27-Jul-22	140	347	6.6478	8	4387	3.51
94	टोमॅटोपिकातीलफळधारणावाढवण्यासाठी उपाय/tomatopikatilfaldharna wadhnyasathi upay/virang_tomato_variety	Increase fruit setting in tomato plants	19-Aug-22	254	886	32.7793	14	5388	7.13
95	honey bee मधमाशी जगाची रक्षक	Honey bee – protector of the world	21-Aug-22	73	103	0.8887	-1	3437	2.21
96	कंट्रोल फॉर sugarcane pyrilla	Control for sugarcane pyrilla	27-Aug-22	15	1354	5.121	2	5880	2.57
97	########		27-Aug-22	16	188	0.7401	0	4562	1.84
98	ऊस पिकातील किड नियंत्रण ! sugarcane pest control	Sugarcane pest control	29-Aug-22	553	331	11.709	3	8212	2.55
99	टोमॅटो खत व्यवस्थापन टोमॅटो लागवड खत व्यवस्थापन | टोमॅटो खत वेळापत्रक | tomato fertigation schedule	Tomato fertilizer schedule – fertigation management	31-Aug-22	448	826	34.315	17	11932	4.75
100	sprey #tomato	Spray – #tomato	3-Sep-22	15	787	2.7848	2	8154	2.32
101	टोमॅटो रोग नियंत्रण | tomato disease control | tomato pikatil kid niyantran	Tomato disease control	20-Sep-22	232	1220	35.9826	21	13399	6.22

102	helicoverpa Ali	Helicoverpa pest	23-Sep-22	16	407	1.4804	0	4180	1.87
103	टोमॅटो प्लॉट #tomato #agropradhan #farming	Tomato plot – #Agropradhan #farming	24-Sep-22	15	1673	5.1822	2	11570	3.01
104	tomatotutanagali	Tomato leaf miner pest	25-Sep-22	24	244	1.0956	0	5385	3.64
105	mirchi pikatil virues niyantran| मिरचीपिकावरीलचुर्डामुर्डानियंत्रण| मिर्ची पिकातील बोकड्या नियंत्रण	Chilli virus disease control	31-Oct-22	41	127	0.936	0	3198	2.44
106	chilli thrips control/ black thripes /मिरची पिकावरील फुलकिडे नियंत्रण/ब्लॅक थ्रीप्स कंट्रोल	Chilli thrips control – black thrips control	18-Dec-22	380	4351	193.6638	90	41045	8.81
107	हरभरा पहिली फवारणी /harbhara pahali favarni /ghate Ali niyantran/हरभरा घाटे अळी नियंत्रण	First spray in chickpea – pod borer control	11-Jan-23	381	259	8.1576	5	6062	3.07
108	मिरची पिकवरील चुरडा मुरडा व्हायरस नियंत्रण	Chilli leaf curl virus control	12-Jan-23	442	785	36.5302	23	12956	4.72
109	कांदा पिकावरील रोग नियंत्रण /कांदा करपा रोग नियंत्रण /kanda piwaril pahili fawarni	Onion disease control – first spray for purple blotch	12-Jan-23	244	378	10.4076	5	8430	3.51
110	त्रायकॉडरमा निर्माण विधी/traycoderma nirmiti vidhi	Trichoderma preparation method	18-Apr-23	252	181	3.8948	0	3989	2.83
111	धाण्यातील कीड नियंत्रण	Stored grain pest control	13-Sep-23	261	115	3.0372	0	2834	2.93
112	HOW TO CONTROL MANGO HOPPERS	How to control mango hoppers	11-Apr-24	547	310	8.5858	2	3584	4.97

Table. 2: Summary statistics of top-performing agricultural advisory videos on YouTube based on views, watch time, subscriber gains, impressions, and click-through rate (CTR)

Metric	Mean	Std. Dev.	Min.	Max.
Views	30,190	12,474	17,796	46,381
Watch Time (Hour)	2,280.27	1604.4	1,130.28	5,416.79
Subscriber	867,17	380,98	571	1,463
Impression	374,701	231,916	132,330	724,295
CTR (%)	7.30	2.54	4.03	10.70

Fig 4: Video related to fruit fly control.

Views and CTR showed a positive trend, with higher CTR often associated with videos addressing urgent pest management topics. Videos with watch times above 2,000 hours tended to have higher subscriber gains. Pest-specific instructional content outperformed general agronomy topics in CTR.

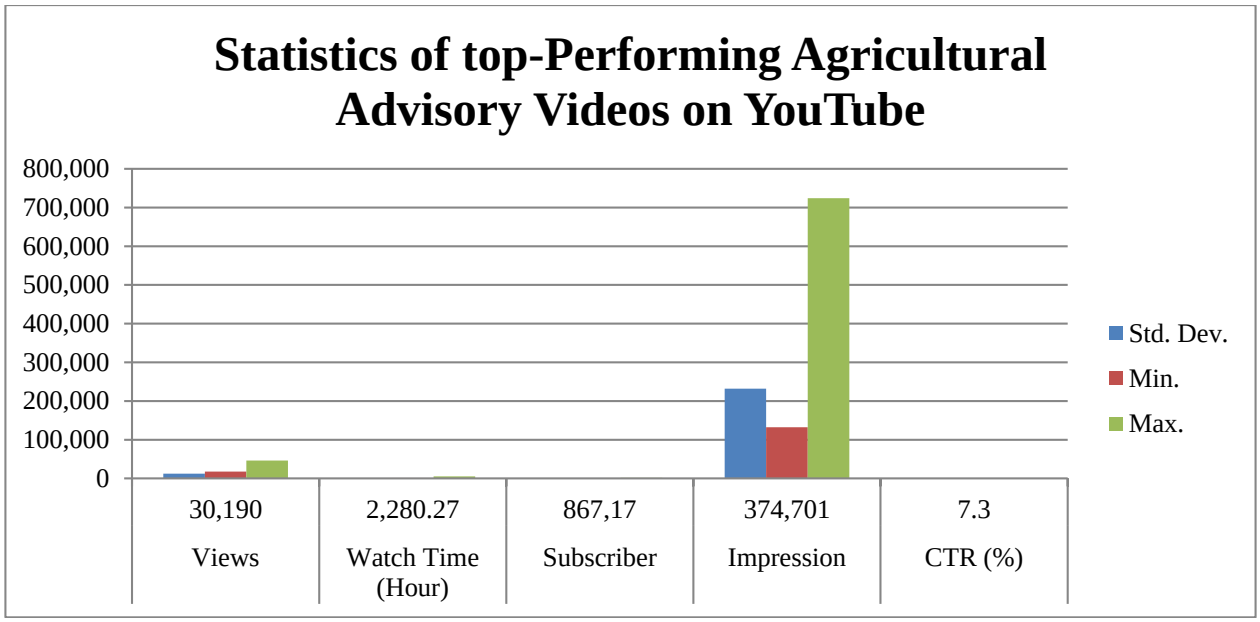

Fig 5: Statistics of top-Performing Agricultural Advisory Videos on YouTube.

Conclusion

The present study revealed that YouTube is an effective and influential digital platform for agricultural knowledge dissemination, particularly when content is strategically developed to address farmers' immediate needs. Analysis of viewership, engagement metrics, and audience responses the platform's impact is maximized when videos are: delivered in the local language, problem-oriented, of short-to-moderate duration average (2–7 minutes), and supported by practical demonstrations and farmer success narratives. Pest and disease-specific videos such as Mealy bug control, Thrips management, and Fruit fly control consistently recorded the highest Click-Through Rates (CTR) (above 10%) and superior viewer retention compared to general agronomy content. Likewise, videos showcasing high-value crop practices with clear economic benefits, such as Geranium cultivation and Onion Plantation techniques, achieved substantial viewership, longer watch times, and significant subscriber gains. Such results indicate that farmers place greater trust and interest in content that provides tangible, profit-oriented solutions.

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