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Assessing Knowledge and adoption levels of Organic farming among the farmers in Anantapur district of Andhra Pradesh.

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Abstract:

The significance of research on farmers' knowledge and adoption rates of recommended organic farming technologies, as well as the challenges they encounter in the adoption process, cannot be overstated. Additionally, the use of inorganic fertilizers has been shown to negatively impact valuable microbial populations and soil properties, leading to heightened environmental pollution. Therefore, attempt was made to study the issue in Anantapuramu District, Andhra Pradesh, to appraising the knowledge and adoption patterns of organic farming, to find out the relationship between the socio-economic factors with knowledge and adoption levels; and to identify the constraints. Results, based on interview conducted among 300 farmers revealed full (100%) knowledge on the use of FYM and Tank silt application to mulberry and their adoption levels are range from 75 % - 100% . However, when it comes to Compost and Green manure techniques, their knowledge levels vary within the range of 70-80%. Despite this relatively high knowledge base, the adoption levels for these practices are notably low, ranging from 35-40.5%. Only 10% of farmers possess full knowledge and their adoption levels are remain very low(3.5% - 8.5%) with regards to VAM (Vesicular Arbuscular Mycorrhizal) and Panchagavya. Majority of farmers, ranging from 77% to 100%, have nil knowledge and 91.5% to 100%, have not adopted these technologies and practices such as application of biofertilizers, VAM and PSB (Phosphate Solubilizing Bacteria). Major Constraints for the above are High cost of organic manure compared to chemical fertilizers , lack of finance, lack of adequate knowledge on scaling up and integration, traditional practice etc. Socio-economic factors of the farmers such as education, total land holding, area under mulberry, extension contact, social participation and cocoon yield were positively related and significantly associated, while age, family size and experience of respondents had shown negative relationship with non significant association with knowledge and adoption level. The study's conclusion highlights the significant positive impact of knowledge and adoption of organic manures on the vertical growth of sericulture. Overall, the adoption of organic manures represents a significant step towards sustainable and environmentally-friendly sericulture, benefiting both farmers and the broader ecosystem. These findings emphasize the importance and potential benefits of embracing organic farming practices in the sericulture industry. By incorporating organic manures into sericulture practices, the industry can move towards a more sustainable and promising future.

***Key words* : Adoption, Knowledge, Organic farming, Socioeconomic factors.**

INTRODUCTION :

Agriculture:

Organic farming is a method of agriculture that emphasizes the use of natural inputs and ecological practices to cultivate crops and raise livestock. It is based on principles aimed at promoting environmental sustainability, biodiversity, and the health of ecosystems, while also ensuring the well-being of animals and humans. Organic farming has gained significant attention and become a top priority in the agricultural sector in

recent years. It is recognized as an eco-friendly approach that focuses on sustainable practices and the use of natural inputs to enhance soil characteristics and crop yields. Additionally, organic manure contains a wide range of micronutrients vital for plant development. Organic agriculture is a holistic production management system which promotes and enhances agro ecosystem health, including biodiversity, biological cycles, and soil biological activity and it also emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems(Baskaur *et al*.,2021)

Sericulture :

Sericulture is an important agricultural practice that combines both art and science in the rearing of silkworms for the production of raw silk, offering quick returns to farmers and contributing to the global silk industry. In the context of mulberry cultivation, organic farming can be highly beneficial for improving soil fertility, enhancing plant health, and increasing the overall yield of mulberry plants. The adoption of organic farming application in mulberry cultivation has gained significant attention due to the increasing demand for organic products and sustainable agricultural practices. Mulberry plants require essential nutrients such as nitrogen, phosphorus, and potassium (NPK) for optimal growth. Organic manure provides these nutrients in a slow-release form, ensuring a steady supply over time. To adopt organic farming application in mulberry cultivation, farmers need to acquire knowledge about the types of organic manures available, their nutrient composition, and the appropriate application rates. Organic farming application in sericulture, which is the cultivation of silkworms for silk production, can have several benefits for the overall health and productivity of silkworms and mulberry plants. Organic mulberry cultivation can lead to the production of high-quality leaves that are free from chemical residues, meeting the demands of organic markets and potentially fetching premium prices. The application of organic manures in mulberry cultivation can improve moisture holding capacity, enhance soil biological properties, and contribute to higher productivity when combined with integrated nutrient management practices. (Anilkumar and John, 1999 , Shivaprakash and Narayanagowda, 2006,). The negative impact of chemical fertilizers on silkworm crops and the importance of using organic manures have been recognized in recent research. The study conducted by Pragya Verma *et al.* in 2021 highlights the drawbacks of excessive chemical fertilizer usage and emphasizes the benefits of low nutrient fertilizers and organic manures. Sujatha *et al.*,2015, reported that the concept of organic farming emphasizes the use of organic manures, compost, and other natural substances to enhance soil fertility, promote plant health, and minimize environmental impact. It focuses on maintaining ecological balance, biodiversity, and sustainability in agricultural practices. Jolly (1986) recommending the use of Farm Yard Manure (FYM) as a package for mulberry cultivation aligns with the principles of organic farming. The findings of the study by Mutharaj (1997) suggests that the combined application of enriched press mud and fertilizers had a positive impact on mulberry yield. The study by Purohit (1990) reported that repeated application of green manure can improve soil fertility and lead to sustained increases in production. Studies by Chandrashekar *et al.* (1986), Reddy *et al.* (2000), and Earanna and Govindan (2002) have advocated the use of organic manures like VAM, PSB, and bacterial biofertilizers can contribute to enhanced nutrient availability, improved plant growth, and increased productivity in mulberry cultivation. The study by Sharma et al. (1999) recommended that the application of oil cakes in mulberry cultivation can serve as a nutrient source, improve soil health, and potentially help in controlling soil-borne mulberry diseases. The studies by Das et al. (2002), Gowda (1996), and Vijayakumari and Sujathamma (2002) reported that the utilization of recycling techniques such as VCP (vermicompost production) and composting of seri-residues to increase organic matter in the soil is indeed beneficial for improving the quality and quantity of mulberry leaves. Foliar application of Panchagavya on mulberry plants has been suggested to promote plant growth by supplying various nutrients, growth regulators, beneficial microorganisms to the plants and increasing their resistance to pests and diseases. *Panchgavya* plays a crucial role in organic farming practices as the most favourable organic manure for agricultural fields and its application ensures zero usage of harmful synthetic fertilizers, pesticides, insecticides, and antibiotics (Komal *et al.*,2022).The implementation of various technologies,

including the use of organic manures, has the potential to improve the quality and quantity of mulberry leaf, leading to successful silkworm rearing and higher returns. However, there can be reluctance among farmers to fully adopt recommended organic manures due to economic and biological factors. (Vijayaprakash and Dandin, 2005).

JUSTIFICATION OF RESEARCH

Certainly, the production and use of various organic manures in mulberry cultivation and silkworm rearing can have multiple benefits, including enhanced crop productivity, reduced cultivation costs, environmental protection, and improved cocoon quality. Conducting a study in Anantapuramu District of Andhra Pradesh, a leading sericulture area, with the mentioned objectives can provide valuable insights into the effectiveness and potential of organic practices. Here are the objectives typically pursued in such studies:

OBJECTIVES OF RESEARCH

1. To assess knowledge levels and adoption patterns of recommended organic farming technologies among farmers in Anantapuramu district of Andhra Pradesh.
2. To analyze the relationship between socio-economic factors and knowledge/adoption levels of farmers in Anantapuramu district of Andhra Pradesh.
3. To Identify constraints or reasons and suggesting measures that hinder farmers from increasing their knowledge and adopting organic farming practices in Anantapuramu district of Andhra Pradesh.

EXPERIMENTAL DETAILS:

MATERIALS AND METHODS :

Sample Size and Selection: The study was conducted with sample size of 180 farmers in Three mandals. From each mandal, three villages were selected, resulting in a total of nine villages. In each village, 20 farmers were randomly selected by using random sampling technique. This will help ensure that the selected farmers are representative of the population within the studied area.

Geographic Focus: The study concentrated specifically on Anantapur District in Andhra Pradesh during the year 2022-23 . By focusing on this particular district, the research can gain insights into the knowledge and adoption patterns of organic farming technologies in that specific geographical context.

Data Collection: The study likely employed various data collection methods, such as survey, interviews or questionnaires, to gather information from the selected farmers using pre-tested schedule was adopted. These methods would have allowed researchers to collect data on farmers' knowledge levels and adoption patterns on mulberry cultivation with organic manures and socio-economic factors of the farmers namely age, education, family size, experience, total land holding, area under mulberry cultivation and cocoon yield and constraints faced by farmers in study area.

Analysis and Findings: The collected data can be analyzed using appropriate statistical techniques viz., frequency and correlation tests to find out the relationship between socio-economic variables of knowledge on adoption in using organic manures.

RESULTS AND DISCUSSION

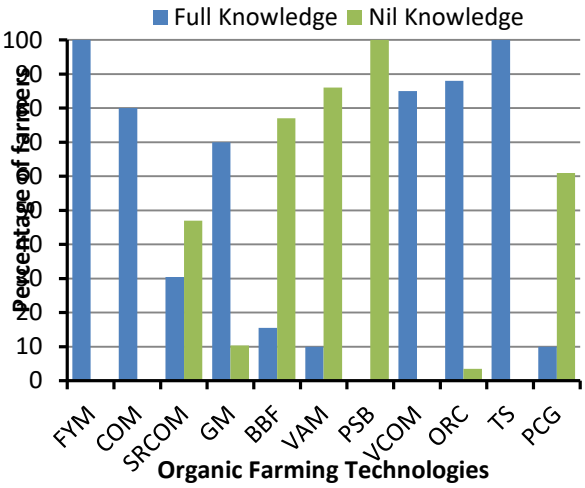
1,Knowledge on organic farming technologies with the farmers in Anantapuramu district of Andhra Pradesh.

It is observed from Table 1& Fig 1 that all of the sample farmers (100%) had full knowledge on the use of FYM and Tank silt application to mulberry. 88% of farmers had full knowledge on organic cakes(neem, castor, groundnut), 85% on Vermicompost).,80% on Compost and 70% on Green manure (sowing and mulching of diancha, sun hemp and other leguminous spp.). Full knowledge on VAM and *panchagavya are 10%* only. About 20 to 29% of the farmers have partial knowledge on compost, green manuring, composting of seri-residues, and Panchagavya. Unfortunately, 77- 100% of farmers had no knowledge on application of N-fixing biofertilizers *(Azotobactor* and *Azospirillum),* VAM and PSB. The present results are in agreement with the findings of earlier researchers (Aswathanarayana, 1989; Ranganatha, 1997; Borka et al., 2000; Dayananda and Kamble, 2008; Pradeep Kumar *et al*., 2012).

Table 1: Knowledge on recommended organic manures with the farmers in Anantapuramu district of Andhra Pradesh

#	Name of organic manure	Knowledge level (%)		
		Full	Partial	Nil
1	Farm Yard Manure	100	--	--
2	Compost	80	20.0	--
3	Seri residue compost	30.5	22.5	47.0
4	Green manure	70.0	20.6	10.4
5	Bacterial Biofertilizers (Nitrogen fixing)	15.5	7.5	77.0
6	VAM	10.0	4.0	86.0
7	PSB	--	--	100
8	Vermicompost	85.0	15.0	--
9	Organic cakes (Neem/Castor/Groundnut)	88.0	8.5	3.5
10	Tank silt	100	--	--
11	Panchagavya	10.0	29.0	61.0

Fig:1 **Knowledge on recommended organic manures with the farmers in Anantapuramu district of Andhra Pradesh**



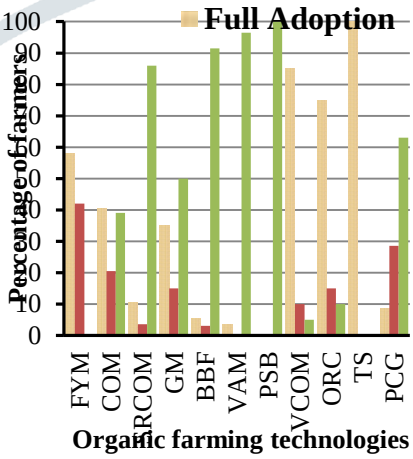
2. Adoption of organic farming technologies with the farmers in Anantapuramu district of Andhra Pradesh

With regard to adoption of technologies by the farmers (Table 2 & Fig 2), it was found that 75 to 100% of the farmers had fully adopted the FYM and tank silt. Regarding Vermicompost, Green manure and oilcakes like neem, castor, ground nut (while neem is used very little) and compost the rates of partial adoption were 10%,15% and 20.5% respectively. 63% to 96.5% of farmers had non-adopted the technologies viz., Application of Bacterial bioferitilizers, VAM, Seri-residue and Panchagavya. 100% of farmers have non-adopted the technology is PSB. The findings are in conformity with earlier reports (Jaishankar and Dandin, 2004; Sujatha *et al.*, 2015).

Table 2 : Adoption levels on recommended organic manures with the farmers in Anantapuramu district of Andhra Pradesh.

#	Name of organic manure	Adoption level (%)		
		Full	Partial	Nil
1	Farm Yard Manure	58.0	42.0	--
2	Compost	40.5	20.5	39.0
3	Seri residue compost	10.5	3.5	86.0
4	Green manure	35.0	15.0	50.0
5	Bacterial Biofertilizers (Nitrogen fixing)	5.5	3.0	91.5
6	VAM	3.5	--	96.5
7	PSB	--	--	100
8	Vermicompost	85	10	5.0
9	Organic cakes (Neem/Castor/Ground nut)	75.0	15.0	10.0
10	Tank silt	100	--	--
11	Panchagavya	8.5	28.5	63.0

Fig 2 : Adoption levels on recommended organic manures with the farmers in Anantapuramu district of Andhra Pradesh.



3. Constraints/Reasons for partial/non-adoption of organic farming technologies with the farmers in Anantapuramu district of Andhra Pradesh.

The constraints/reasons (Table 3 & Fig 3) for partial/non adoption of organic farming are

1.High cost of organic manure compared to chemical fertilizers: 75% of farmers have said the reason is the high cost associated with organic manures. Compared to chemical fertilizers, organic manures may be relatively expensive, especially in the short term. The initial investment or ongoing expenses for procuring and applying organic manures can pose financial challenges for farmers, particularly those with limited resources.

2.Lack of technical guidance on organic farming (Training): 63% of farmers may not be familiar with the potential advantages of organic manures, their application methods, or the specific organic options suitable for sericulture. Lack of access to information and technical guidance can hinder the adoption process. The adoption of organic manures requires a certain level of technical expertise and knowledge in their proper application. Lack of technical support, training programs, or extension services specific to organic sericulture may hinder farmers from confidently adopting organic manures. Limited access to training or guidance on organic farming practices can be a constraint.

3.Lack of finance : 60% of farmers are facing financial constraints as a significant reason for the partial or non-adoption of organic manures. The cost associated with procuring and applying organic manures can be higher compared to chemical fertilizers. This financial burden can pose challenges for farmers, especially those with limited resources or low-income levels. The higher upfront investment or ongoing expenses required for organic manures may deter farmers from fully embracing their adoption. Financial constraints can restrict the ability of farmers to purchase organic manures in the desired quantities or consistently apply them throughout the crop cycle, leading to partial or non-adoption of organic manures.

4.Lack of adequate knowledge on scaling up and integration : 60% of farmers had non adopted organic manures due to transitioning from conventional practices to organic farming requires a shift in mindset, practices, and sometimes, adjustments to the entire farming system. Farmers may face challenges in integrating organic manures into their existing farming practicess, such as crop rotations pest management strategies, or irrigation systems. Scaling up organic practices across the entire sericulture operation can be a gradual and complex process.

5.Not give quick response in contrast to chemical fertilizers : 55% of farmers have given reason for partial/non adoption was organic manures may have a slower release of nutrients compared to synthetic fertilizers. While this slow-release aspect is beneficial for long-term soil health, it may require a longer period for visible results in crop growth and yield. Some farmers may prefer the quick response and immediate benefits provided by synthetic fertilizers.

6.Traditional practice: 52% of farmers are following traditional practices as traditional practices often involve the use of chemical fertilizers and pesticides, which are readily available and considered easier to apply. Farmers may feel more comfortable and confident with these conventional methods, as they have been using them for generations and have observed positive results in terms of crop yield.

7. Lack of proper knowledge on organic manures: 50% of farmers are not having proper knowledge on organic farming. The lack of proper knowledge on organic manures is a significant barrier to their adoption. Many farmers may not have sufficient understanding of the benefits, methods, and application techniques of organic manures. This lack of knowledge can stem from limited access to information, inadequate training programs, or a lack of awareness about the principles and practices of organic farming.

8. Lack of credit facilities on organic manure : 48% of farmers are partial/non adoption of organic manures is due to the lack of credit facilities specifically tailored for organic manure is another significant obstacle to its adoption. Farmers may face difficulties in accessing financial support or loans specifically designated for purchasing organic manures.

9.Non- availability of organic manures in time: 47% of farmers are facing this problem of non- availability of organic manures in time The availability and accessibility of organic manures can be a significant constraint. Organic manures, such as farmyard manure or vermicompost, may not be easily accessible or readily available in certain regions. Limited local production, insufficient distribution networks, or challenges in sourcing organic inputs can make it difficult for farmers to adopt these manures.

10.More time and labour requirement: 45% of farmers are partial/non adopted the organic farming is organic manure application may require more time and labor compared to chemical fertilizers. Farmers need to devote additional effort to prepare, apply, and manage organic manures effectively. This can be a constraint for farmers who already face labor shortages or have limited time due to other farming activities.

11. Negligence of farmers: 43% of farmers had negligence on application of organic manures in their field is a notable challenge. Farmers may not prioritize or give adequate attention to the proper application of organic manures, which can undermine their effectiveness and hinder the desired outcomes. The above constraints are partially in agreement with previous reports (Mallikarjuna et al., 2004; Dhane and Dhane, 2004; Pradeep Kumar *et al*., 2012; Tanvi singh and Rachana Kapila, 2021).

Fig 3: Constraints/Reasons for partial/non adoption of the recommended organic manures in Anantapuram district of Andhrapradesh.

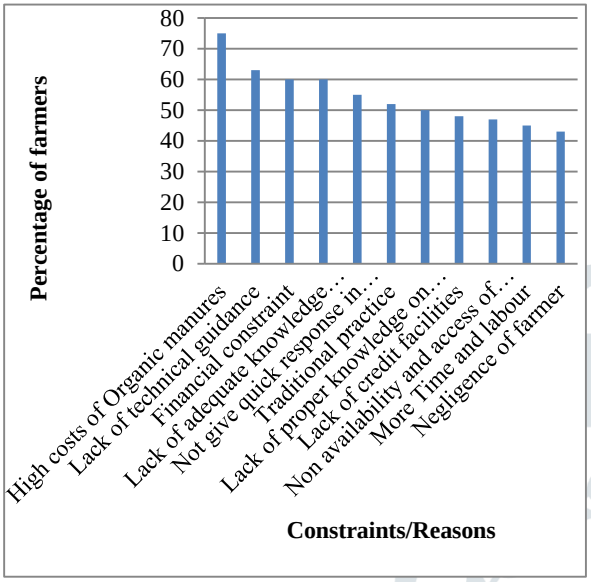


Table 3: Constraints/Reasons for partial/non adoption of the recommended organic manures in Anantapuram district of Andhrapradesh.

#	Constraints	Farmers (%)
1	High costs of Organic manures	75
2	Lack of technical guidance (Training)	63
3	Financial constraint	60
4	Lack of adequate knowledge on Scaling up and integration	60
5	Not give quick response in contrast to chemical fertilizers	55
6	Traditional practice	52
7	Lack of proper knowledge on organic manures	50
8	Lack of credit facilities	48
9.	Non availability and access of getting organic manures in time	47
10.	More Time and labour	45
11.	Negligence of farmer	43

4. Relationship between knowledge, adoption and socio-economical factors of farmers in Anantapuramu district of Andhra Pradesh

The correlation between knowledge and adoption level (Table 4) with selected socio-economic factors of the farmers in table 4 revealed that variables such as education, total land holding, area under mulberry, extension contact, social participation and cocoon yield were positively related and significantly associated with knowledge and adoption levels. These findings are in accordance with published reports (Srinivasa et al., 1996; Lakshmanan and Geethadevi, 2007; Mahanthesh, 2000; Tippeswamy, 2007; Sujatha *et al.,* 2015). However, age, family size and experience of respondents had shown negative relationship with knowledge and adoption level. These findings except family size are in contrast with published reports (Srinivas et al., 1996; Lakshmanan and Geethadevi, 2007; Sujatha *et al.,* 2015).

Table 4: Correlation between socio-economic characteristics of farmers and level of their knowledge and adoption of technologies on organic farming in Anantapuramu district of Andhra Pradesh.

Characteristics	Knowledge	Adoption
Age	-0.176	-0.098
Education	0.348*	0.256*
Family size	-1.205	-0.143
Experience	-0.552*	-0.495*
Total land holding	0.265	1.055
Area under mulberry	0.098	0.068
Extension contact	0.075*	0.762*
Social participation	0.170*	0.097*
Cocoon yield	0.358*	0.258*

* Indicate the significance level at 5%

5. Reasons for significant/ non significance level

Social participation plays a crucial role in the knowledge and adoption levels of sericulturists, as it enables them to interact with various members of local institutions such as cooperative societies, sericulture credit cooperative societies, and youth clubs. By actively participating in meetings and engaging with these institutions, sericulture farmers have the opportunity to exchange ideas, share experiences, and gain valuable knowledge related to sericulture practices. Similar findings were reported (Mahanthesh, 2000; Lakshmanan and Geethadevi, 2007; Tippeswamy, 2007; Pradeep Kumar *et al*., 2012; Sujatha *et al.,* 2015).

The area under mulberry cultivation and land holdings had non significant relationship with knowledge and adoption levels in the context of sericulture, it suggests that these factors alone do not determine the level of knowledge and adoption among sericulturists. Other factors may play a more influential role in shaping the knowledge and adoption levels in this field. The present findings are in disparity with previous publications (Borkar *et al.,* 2000; Munikrishnappa *et al*., 2002; Lakshmanan and Geethadevi, 2007 ; Sujatha *et al.,* 2015).

The lack of a significant relationship between land holdings and knowledge and adoption levels in sericulture could be attributed to the fact that land, on its own, may not be the most influential economic asset directly impacting these levels. Instead, other variables such as higher education and greater mass media use might indirectly influence knowledge and adoption in sericulture. During the field studies, it was noted that the majority of farmers lacked awareness regarding organic farming practices, both in sericulture and other agricultural crops. It was supported by previous findings (Pradeep Kumar *et al*., 2012), however, these findings are in contradictory with the earlier reports (Aswathanarayana, 1989; Munikrishnappa *et al*., 2002; Narayanaswamy *et al*., 2005; Dayananda and Kamble, 2008; Sujatha *et al*., 2015).

The findings highlight the need to implement programs focused on upgrading the knowledge of sericulturists regarding organic farming practices. It was observed that the majority of farmers in the age group of 45-55 did not display significant interest in organic farming. However, some extension agents from the Sericulture Department and voluntary organizations have taken up the task of promoting organic farming in both sericulture and other agricultural crops.

CONCLUSION

Based on the study it is concluded/highlights that the knowledge and adoption of organic manures have had a significant impact on the vertical growth of sericulture. The utilization of organic manures has led to increased crop productivity, improved soil health, environmental sustainability, and potential market advantages. These outcomes demonstrate the positive effects of embracing organic farming practices and signify a promising trajectory for the sericulture industry. The study further revealed that the use of organic fertilizers in sericulture has multiple positive effects. It enhances soil microbial populations, improves soil physical properties, and directly impacts the quality and quantity of mulberry leaves. This, in turn, leads to increased cocoon crop and improves the quality of raw silk. By embracing organic farming practices and utilizing organic manures/fertilizers, sericulturists can achieve favorable outcomes in terms of both agricultural productivity and the quality of the final silk product. Based on the findings of the study, it is recommended that farmers in sericulture should receive financial support through credit facilities. Providing timely and affordable credit facilities specifically tailored for organic farming can enable sericulturists to invest in organic inputs and ensure the smooth implementation of organic farming practices. In addition to financial support, the government should also focus on ensuring the availability of organic and biofertilizers. Furthermore, implementing programs and training initiatives for knowledge upgradation of sericulturists regarding organic farming practices is essential. Government agencies, agricultural extension services, and relevant stakeholders should collaborate to develop and implement these knowledge up gradation programs. Farmer education and awareness programs to highlight the benefits and proper use of organic manures, as well as their long-term advantages for soil health and sustainability. Promoting and incentivizing organic farming practices through government support, subsidies, and financial assistance to make organic inputs more affordable for farmers. Improving access to organic manures by developing local production and distribution systems, promoting farmer cooperatives, and establishing organic farming networks.Conducting on-farm demonstrations and field trials to showcase the effectiveness of organic manures and provide tangible evidence of their benefits.Encouraging knowledge sharing and peer-to-peer learning among farmers who have successfully adopted organic manures, creating a network for exchange of experiences and best practices.Sharing success stories and providing practical examples of farmers who have successfully adopted organic practices can inspire others to overcome traditional practices and consider the adoption of organic manures in mulberry cultivation. Addressing these constraints requires a multi-faceted approach, including awareness campaigns, farmer training programs, availability of quality organic inputs, access to technical support, and policy support from relevant authorities. By addressing these challenges, farmers By effectively scaling up and integrating organic manures into the sericulture farming system, farmers can maximize the benefits of organic practices, enhance sustainability, improve soil health, reduce environmental impacts, and achieve higher yields and quality in silk productioncan be better equipped to adopt organic manures effectively in sericulture and harness their benefits for sustainable and environmentally friendly silk production. This, in turn, can contribute to sustainable and environmentally friendly sericulture practices, enhanced crop productivity, improved soil health, and the production of high-quality silk. The findings of the study can provide insights into the current state of organic farming practices, identify gaps and challenges, and highlight opportunities for crop improvement. The

study serve as a valuable resource for policymakers, scientists, and extension workers. By utilizing this knowledge, they can collaboratively formulate and develop effective programs, policies, and extension services that support the development of sericulture farmers and promote sustainable and organic practices in the sericulture industry.

POLICY IMPLEMENTATIONS

All the sericulturists in five mandals in Anantapur District had knowledge on few technologies and adopted them. To promote the adoption of organic farming practices, it is indeed necessary to supply organic and biofertilizers at subsidized costs. The availability of these inputs at affordable prices can significantly reduce the financial burden on farmers and encourage their use in sericulture and other agricultural sectors. Subsidies can be provided by the government or through collaborative efforts between public and private entities. Periodic farmers training programs on the usage of organic farming practices are crucial for promoting knowledge and skills development among farmers. These training programs can cover various aspects of organic farming, including the benefits, techniques, and proper usage of organic inputs. By conducting these programs regularly, farmers can stay updated with the latest advancements in organic farming and acquire the necessary expertise to adopt innovative technologies. Overall, the implementation of these technologies, particularly organic farming practices, has a direct and positive impact on the sericulture industry. It improves the quality and quantity of mulberry leaves, enhances silkworm rearing success, and ultimately enables sericulturists to obtain higher returns, contributing to their overall economic well-being.

REASEARCH HIGHLIGHTS

It is notable that the knowledge levels of sericulture farmers regarding organic manures and organic farming are relatively high, indicating a good understanding of the concepts and techniques involved. However, the adoption levels of these practices remain at a low level. By addressing these problems and implementing the suggested solutions, farmers in the study area can overcome barriers to the adoption of organic farming technologies. This will enable them to enhance their knowledge, successfully implement organic farming practices, and reap the benefits of sustainable and environmentally friendly agricultural production.

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