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Cross-Sectional Study on Usage Patterns of Traditional Fertilizer and Pesticides Among Farmers in Krishnagiri Taluk, Krishnagiri District, Tamil Nadu

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ABSTRACT

Background: Ancient farming practices are rich sources of sustainable agricultural techniques. The use of organic manure, compost and biofertilizers are the cornerstones of the traditional farming. Humans, the "masters of eco system" should start searching for solutions in nature by exploring traditional farming. Despite their benefits, many farmers in Krishnagiri Taluk depend on chemical pesticides and fertilizers, posing environmental and health risks. This study investigated how farmers use herbal fertilizers and pesticides, highlighting their importance in sustainable farming. This study focused on recording the usage patterns of traditional fertilizers and pesticides among farmers in Krishnagiri Taluk, Krishnagiri District.

Methods: A descriptive, cross-sectional, questionnaire-based study was conducted among farmers in Krishnagiri Taluk using judgmental non-random sampling. Data were collected through direct interviews after obtaining informed consent and analyzed using Microsoft Excel 2021.

Results: Farmers largely prefer traditional fertilizers due to their low cost (43%) and soil health benefits (23%), supporting sustainable agriculture by reducing their reliance on chemicals. However, 73% were unaware of government schemes promoting organic and herbal farming, indicating poor outreach and limited extension services availability.

Conclusion: Herbal fertilizers and pesticides are eco-friendly and cost-effective alternatives that support biodiversity, reduce chemical exposure, and align with principles of regenerative agriculture. Encouraging their adoption can help tackle issues related to food safety and the environmental harm caused by the use of agrochemicals. Further research is needed to evaluate additional plant species for their insect-repellent properties and to support their wider adoption among farmers.

Key words: Traditional Fertilizers, Herbal Pesticides, Bio fertilizers, Herbal Cultivation, Traditional Farming, Soil health.

INTRODUCTION

In recent years, several organic fertilizers have emerged as natural stimulants of plant growth and development. Knowledge of these stimulants, including microbial inoculums, has a long history rooted in traditional small-scale composting practices

passed down through generations of farmers[1]. With a growing global population, traditional agriculture remains essential to meet rising food demands, which are projected to reach 321 million tons of food grains by 2020 and ensure national self-sufficiency [2]. Pesticides used in agriculture, including fungicides and herbicides, can harm humans and the environment through processes such as soil absorption, volatilization, runoff, and leaching, even though farmers apply them to control pests and increase crop yield [3]. Food grain production increased fourfold after the Green Revolution, however excessive chemical use has raised sustainability concerns, highlighting the importance of organic farming in addressing social, ecological, and economic challenges [4]. Biofertilizers contain beneficial microorganisms that enhance soil microflora, improve plant growth, and help control disease and pests. These include nitrogen fixers, phosphate, sulfur, and zinc solubilizers, along with vesicular arbuscular mycorrhiza (VAM) and plant growth-promoting rhizobacteria (PGPR), which live in the rhizosphere and act as natural growth enhancers and biocontrol agents [5]. In this context, the usage patterns of herbal fertilizers and herbal pesticides among farmers of Krishnagiri Taluk and district, where traditional farming is practiced were explored. Looking forward, it outlines future directions and research needs in this domain. Current research on documenting the usage patterns of traditional fertilizers and pesticides is essential in the Siddha system of Medicine. These studies are scarce and generally based on very small population, which may also enhance the growth of herbal cultivation among farmers. With rising concerns over agrochemical toxicity harming health and biodiversity, herbal fertilizers and pesticides offer a safer, eco-friendly alternatives. They improve soil health, reduce pollution, support biodiversity, and align with sustainable, regenerative agriculture, while also being cost-effective and locally producible. Herbal fertilizers are derived from natural plant sources, making them eco-friendly and biodegradable. Unlike synthetic fertilizers, they do not pollute soil, water, or air thereby reducing harm to ecosystems. They slowly release nutrients, improving plant absorption and preventing nutrient loss. They also support traditional farming, enhance soil health, and produce safer, chemical-free crops, promote biodiversity by supporting plants, insects, and microorganisms and help recycle agricultural waste through Composting. Herbal pesticides are less likely to cause pest resistance and are safer for farmers, workers, and consumers because of their lower toxicity. They are also cost-effective and can be easily prepared using locally available materials, making them ideal for small-scale farming.

MATERIALS AND METHODS

STUDY TYPE:

Descriptive study

STUDY AREA:

Krishnagiri Taluk, Krishnagiri district.

STUDY DESIGN:

Cross sectional Questionnaire based study.

DATA ANALYSIS:

All collected data were analyzed statistically. The collected data has been be analysed from the questionnaire responses using statistical tools MS EXCEL (2021). The information collected from the respondents was recorded and documented. Data analysis was performed using Microsoft Office Excel 2021. Frequencies and percentages were used to analyse the questionnaire, with results presented in tables and figures.

DATA COLLECTION METHOD

The information was collected from farmers in Krishnagiri. The study was explained at the time of visit and the informed consent were collected from the farmers. Data were collected by requesting the farmers to answer the questionnaire. Personal information from the collected data were kept confidentially.

SAMPLING METHOD: Judgemental Non-random Sampling

RESULT

I.DEMOGRAPHIC DISTRIBUTION:

1.GENDER:

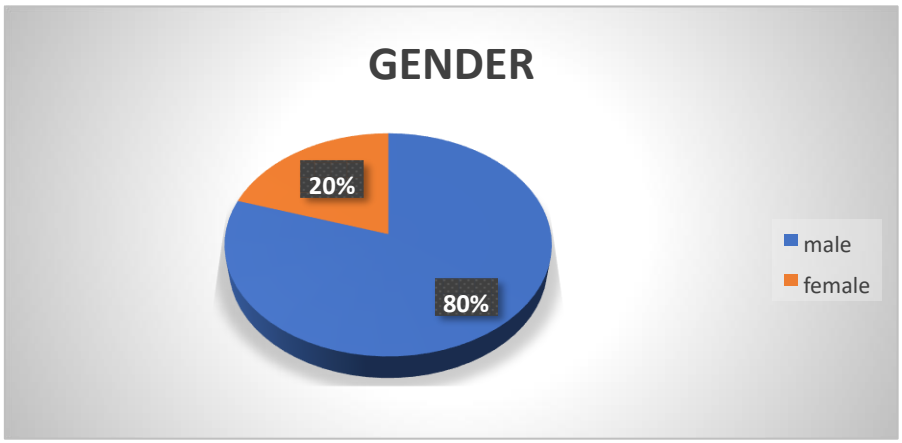


***Figure – 5.1*: shows the gender of farmers. Given pie chart illustrates that 80% of farmers are male and 20% are female.**

2.AGE:

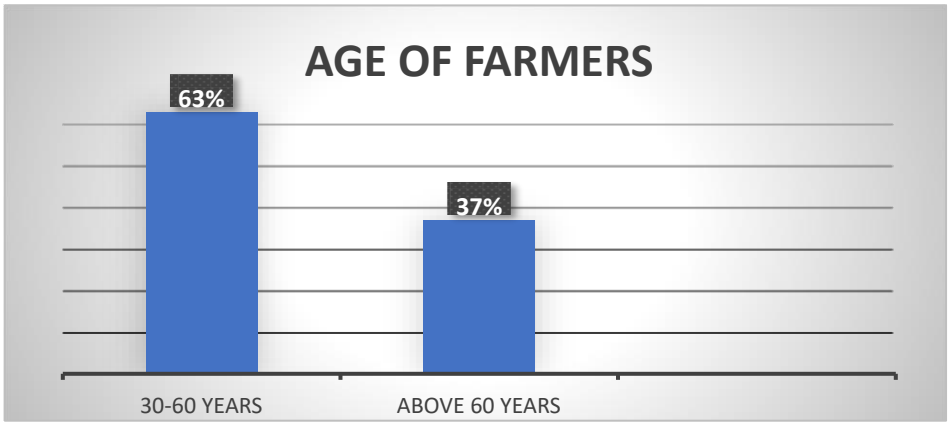


***Figure – 5.2*: shows the ages of farmer. This graph depicts that 63% farmers are aged between 30-60 years and 37% are above 60 years.**

3. EDUCATIONAL STATUS

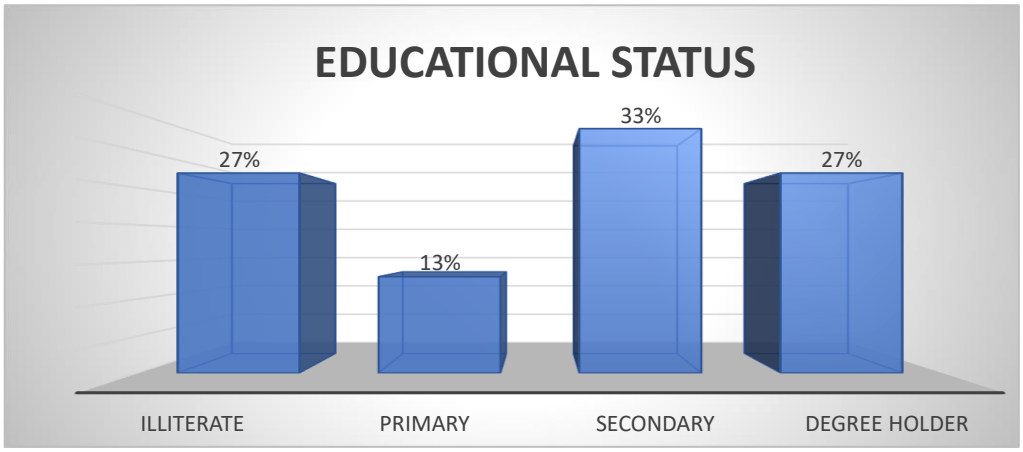


***Figure – 5.3:* shows the educational status of farmers. The chart shows that secondary education is the most common level of attainment, while primary education is the least common. The proportion of illiterate individuals and degree holders is equal, both at 27%.**

4. PRIMARY OCCUPATION IS FARMING

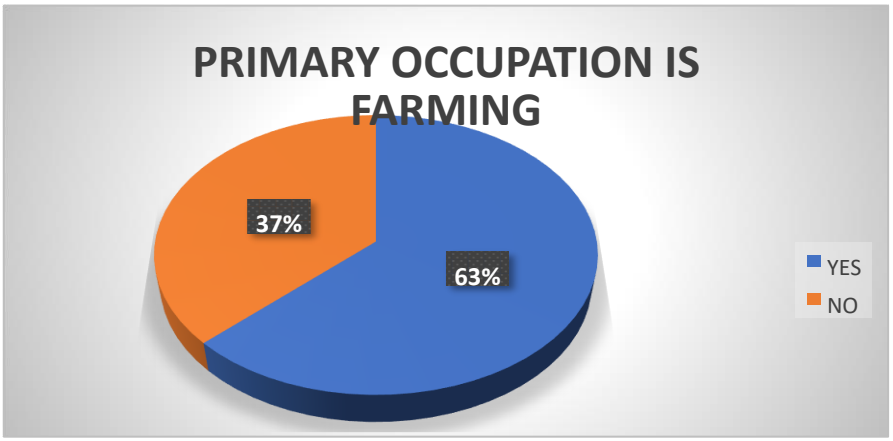


***Figure – 5.4*: shows the primary occupation of farmers. Pie chart shows that 63%farmers primary occupation is farming and 37% farmers doing other occupation**

5.EXPERIENCE OF FARMERS

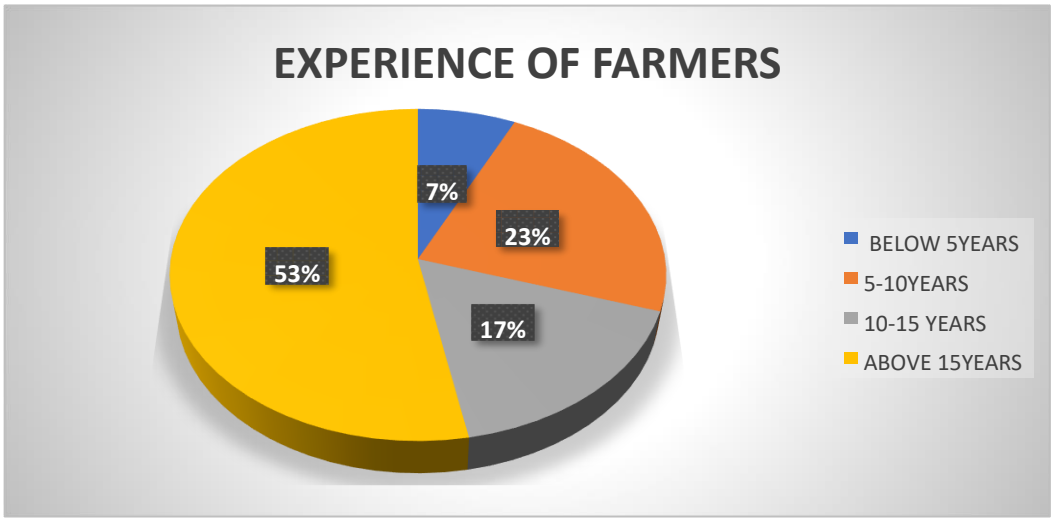


***Figure – 5.5:* shows the experience of farmers. Pie chart shows that 53% of farmers have more than 15 years of the experience in farming. only 5% of farmers have minimum level of experience 5years.**

6.COMMON TYPE OF CROPS PLANTED

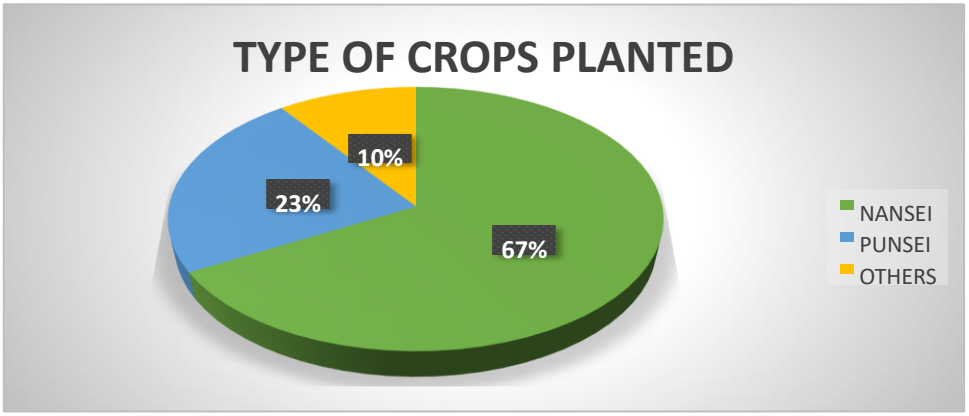


***Figure – 5.6*: shows the common type of crops planted. Pie chart shows that *Nansei* plants are most commonly planted among farmers.**

7.PRIMARY CROPS PLANTED

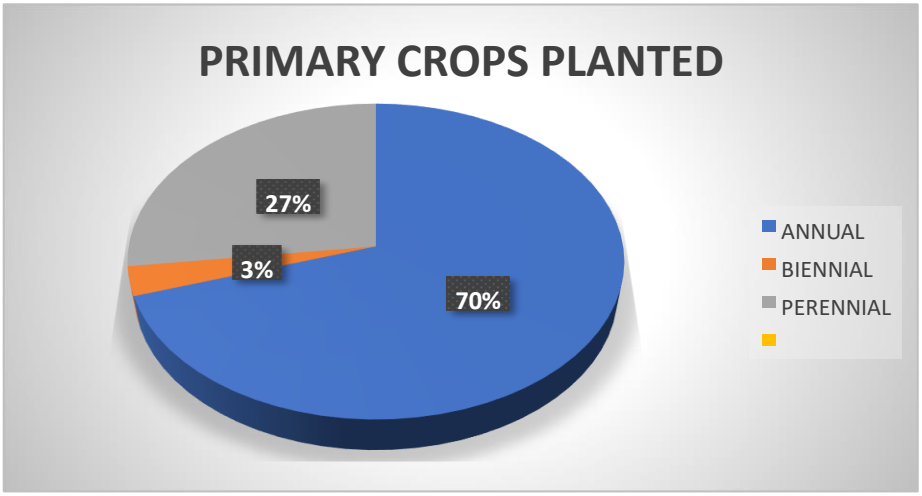


Figure – 5.7: **shows the primary crops planted. Pie chart illustrates that annual crops are more commonly planted by farmers.**

8.FARMERS DOING FARMING TRADITIONALLY

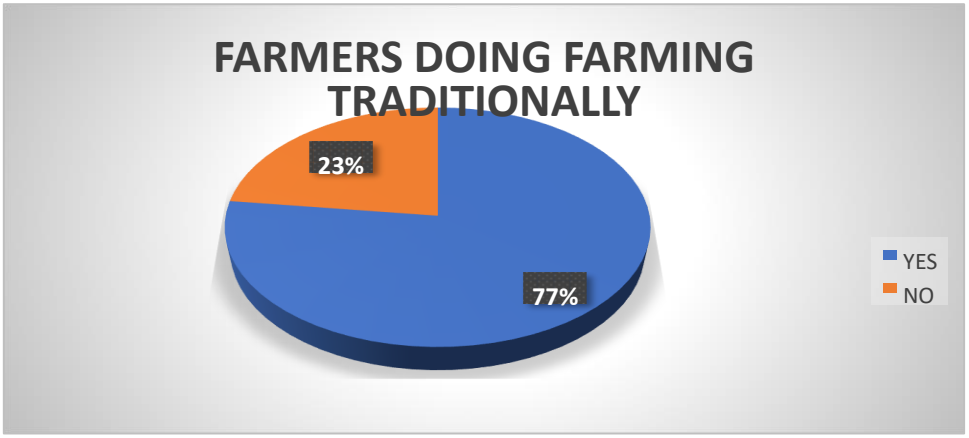


Figure – 5.8**: shows the farming done by farmers traditionally. Pie chart shows that 77% farmers are farming traditionally.**

II. DETAILS ABOUT HERBAL FERTILIZERS
1. TYPE OF FERTILIZERS

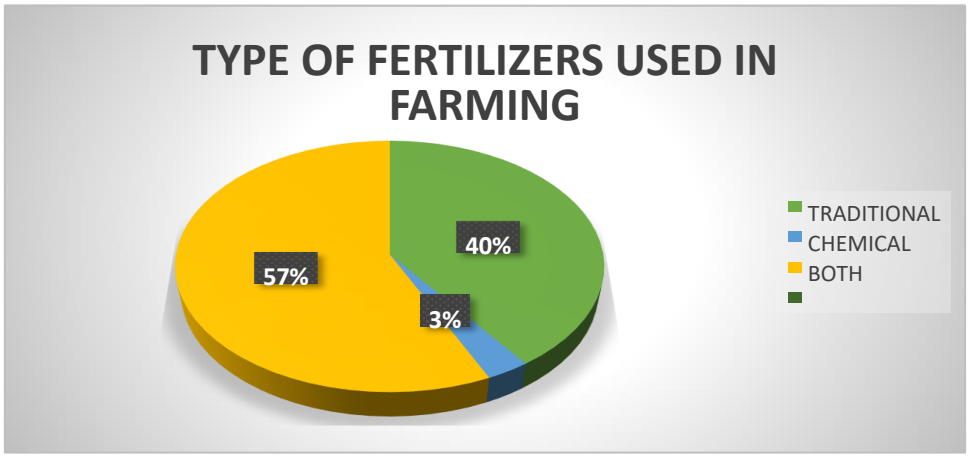


Figure – 5.9: **shows the type of fertilizers used by the farmers. Pie chart shows that 57% farmers are using both traditional and chemical fertilizers, 40% farmers using only traditional.**

2.FACTORS MOTIVATE FARMERS TO USE HERBAL FERTILIZERS

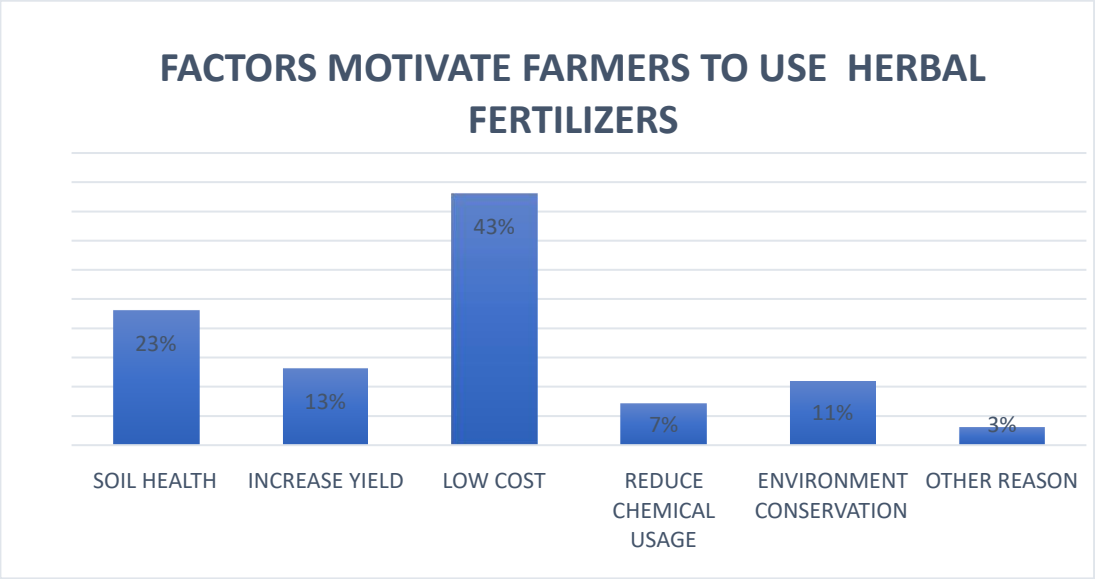


Figure – 5.10: **shows the motive of using herbal fertilizers by farmers. Bar graph illustrates that Farmers primarily adopt traditional fertilizers due to their benefits for soil health (23%) and cost-effectiveness (43%). These fertilizers reduce the reliance on chemical products and contribute to environmental conservation, which 11% of farmers highlighted as a crucial reason for their usage.**

3.SOURCES OF HERBAL FERTILIZERS

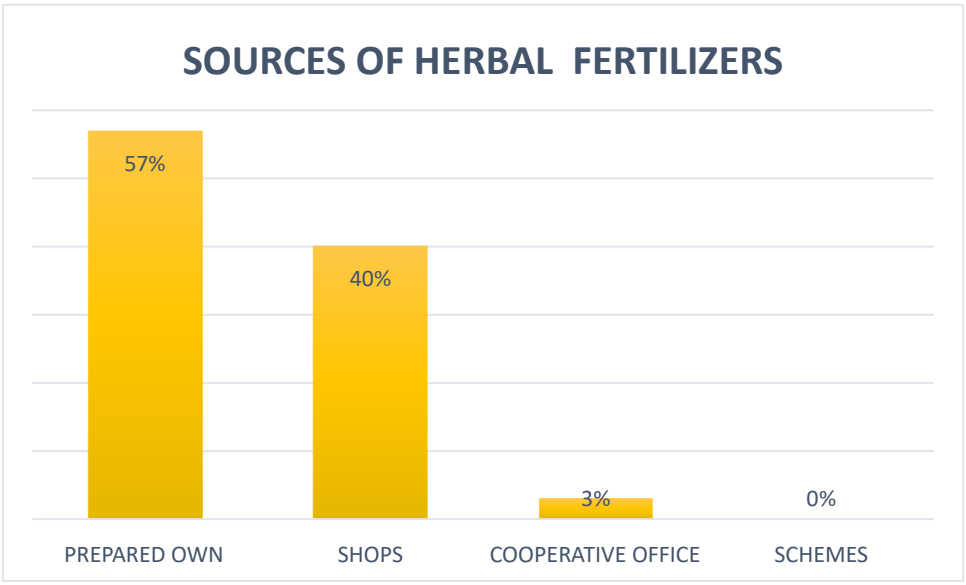


Figure – 5.11: **shows the sources of herbal fertilizers Bar graph illustrates that 57% of farmers prepare their own herbal fertilizers, 40% farmers buy in shops and they lack knowledge on government schemes.**

4.PREPARATIONS OF HERBAL FERTILIZERS

PANCHAGAVYA

Panchagavya, an organic product has the potential to play the role of promoting growth and providing immunity in plant system. Cow dung, cow urine, milk, curd, jaggery, ghee, banana, Tender coconut and water.

Cow dung – 7 kg • Cow ghee – 1 kg

Mix the above two ingredients thoroughly both in morning and evening hours and keep it for 3 days

Cow Urine – 10 liters • Water – 10 liters

After 3 days mix cow urine and water and keep it for 15 days with regular mixing both in morning and evening hours. After 15 days mix the following and panchagavya will be ready after 30 days.

Cow milk – 3 liters
Cow curd – 2 liters
Jaggery – 3 kg
• Tender coconut water – 3 liters
• Well ripened poovan banana – 12 nos.

Preparation

All the above items can be added to a wide mouthed container should be kept open under shade. The content is to be stirred twice a day both in morning and evening. The Panchagavya stock solution will be ready after 30 days.

USAGE

Once in 15 days, two sprays depending upon duration of crops.

Once in 10 days, two sprays.

PANCHAKAVYA

JEEVAMIRTHAM

AMIRTHAKARAISAL

Take fresh cow dung (10 kg), cow's urine (10 litres), country jaggery (1 kg) and water (100 litres) in a cement tank and mix well. This extract can be used on the next day for seed treatment.

JIVAMIRTHAM

Ingredients:

Cow dung-10 kg cow's urine 10 litres, jaggery (old)-2kg,	flour of gram or dal-2 kg • live soil-1 kg and water- 200 litres.

Preparation:

Take 100 litres of water in a barrel and add 10 kg of cow dung and 10 litres of cow's urine. Mix well with the help of a wooden stick, add 2 kg of old jaggery and 2 kg of flour. Mix this solution well with wooden stick. Keep the solution undisturbed for 2 to 7 days for fermentation. Stir the solution regularly three times a day.

USAGE

Three applications are needed one before sowing, second after twenty days of sowing and third after 45 days of sowing.

BEEJAMIRTHAM

Prevents root rot, rootworm diseases

INGREDIENTS

Cow dung 5 kg
Comium 5 liters
50 grams of clean lime
4. A handful of soil
5. Water 20 liters

Add all these and mix well. Let it soak well from 6 pm to 6 am. For seed treatment, the seeds should be soaked in this solution for 2 hours. If it is a seedling, its roots should be soaked well and then planted.

ARAPPUMOR SOLUTION

Arappumor solution helps in stimulating the growth of crops. Pick two kilos of Usilai tree leaves, which are called arapu leaves in the villages, add water and grind them well. Take 5 liters of solution from this and add 5 liters of whey fermented to this solution.use by sprinkling method.

BIOFERTILIZERS

• Azospirilium • Rhizobium • Azotobacter	• Phosphobacteria • Pseudomonas fluorescens

MANURES

Cow dung
Poultry manure
Goat dung

Other green manures

VERMICOMPOST

Parthenium plant should be collected before flowering and layered from bottom to a height of 5-10 cm. cows' urine is sprinkled over it. these should be composted for 10days. Then 200-350 earth worms are released in this compost. these can be compost for 40-60 days and used as vermicompost.

5.BENEFITS OF USING HERBAL FERTILIZERS

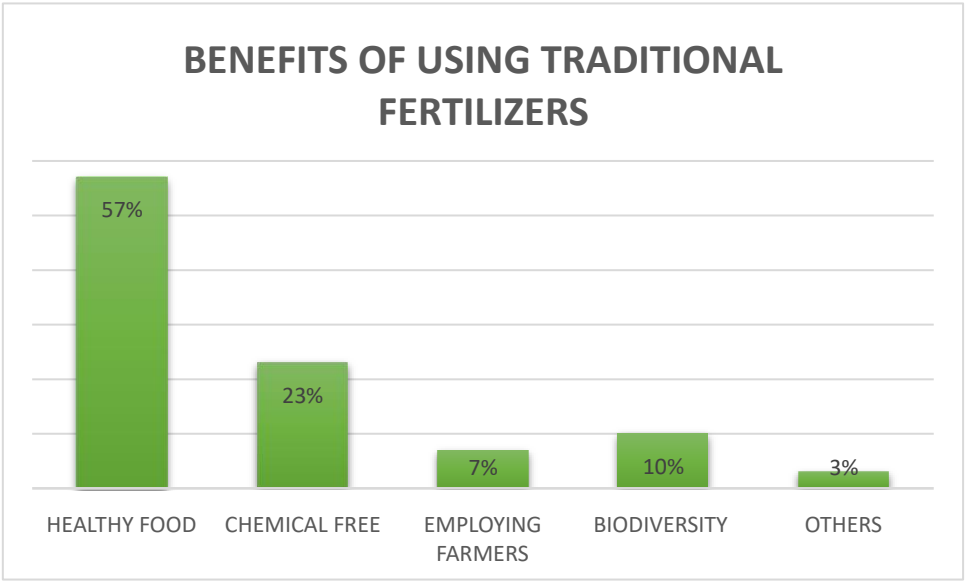


Figure – 5.12: **shows benefits of using herbal fertilizers. This bar chart illustrates that 57% farmers prefer traditional farming for healthy food,23% for chemical free food, 10% for bio diversity conservation and only 7%prefer it for employing farmers.**

6.CHALLENGES FACED BY FARMERS USING HERBAL FERTILIZERS

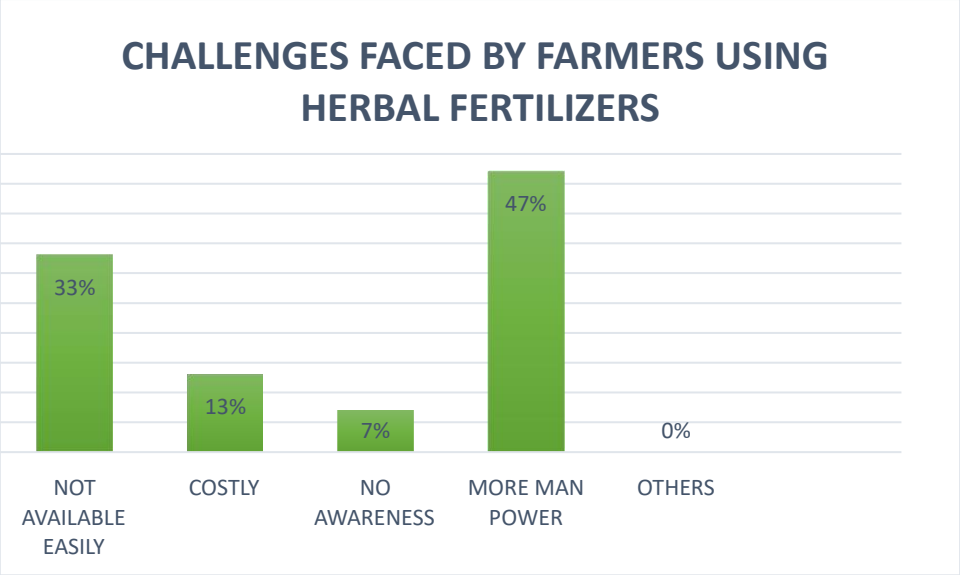


***Figure – 5.13*: shows the challenges faced by using herbal fertilizers. Given bar graph illustrates, farmers face challenges in accessing traditional fertilizers, with 33% citing availability issues, and 47% stating that more manpower is needed for traditional methods**

7.PLANTS COMMONLY USED AS FERTILIZERS

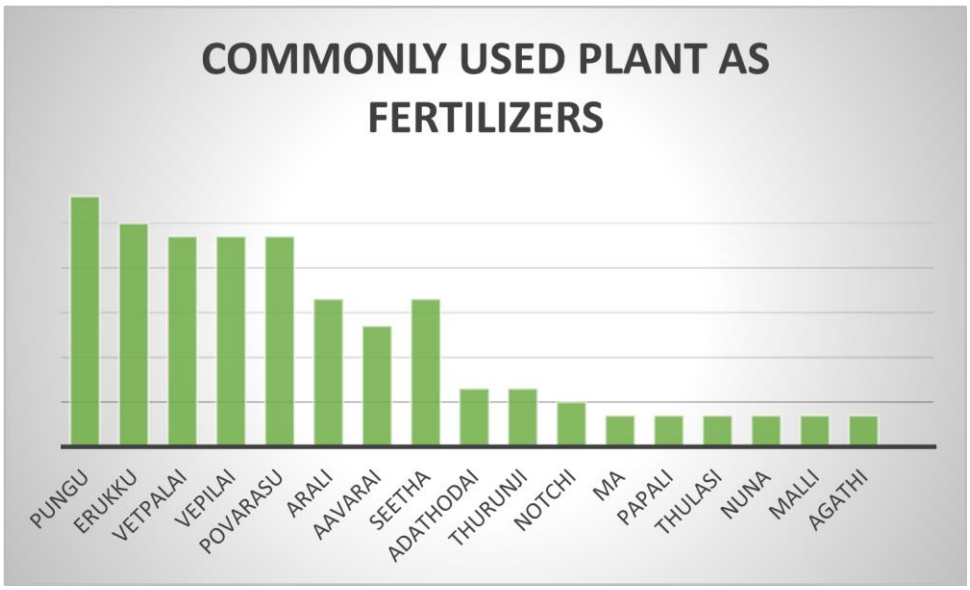


***Figure – 5.14:* shows commonly used plants as fertilizers among farmers**

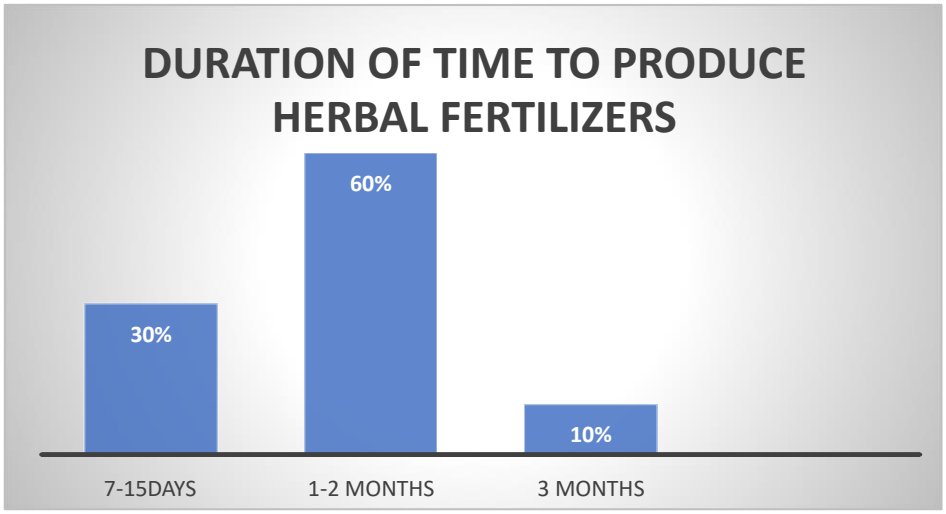
PLANTS COMMONLY USED AS FERTILIZERS

Table 5.1 shows the list of plants used as fertilizers

SNO	COMMON NAME	BINOMIAL NAME	FAMILY	PART USED
1	Agathi	*Sesbania grandiflora*	Fabaceae	Leaf
2	Thagarai	*Senna tora*	Fabaceae	Leaf
3	Aal	*Ficus benghalensis*	Moraceae	Leaf
4	Naval	*Syzygium cumini*	Myrtaceae	Leaf
5	Ilupai	*Madhuca longifolia*	Sapotaceae	Leaf
6	Puli	*Tamarindus indicus*	Leguminaceae	Leaf
7	Usilai	*Albizia odoratissima*	Fabaceae	Leaf
8	Kolinji	*Tephrosia purpurea*	Fabaceae	Leaf
9	Adathodai	*Justicia adathoda*	Acanthaceae	Leaf

10	Aavarai	*Senna auriculata*	Fabaceae	Leaf
11	Arali	*Nerium oleander*	Apocynaceae	Leaf
12	Notchi	*Vitex negundo*	Lamiaceae	Leaf
13	Ma	*Mangifera indica*	Anacardiaceae	Leaf
14	Povarasu	*Thespesia populnea*	Malvaceae	Leaf
15	Vetpalai	*Wrightia tinctoria*	Apocynaceae	Leaf
16	Thulasi	*Ocimum sanctum*	Lamiaceae	Whole plant
17	Koyya	*Psidium guajava*	Myrtaceae	Leaf
18	Erukku	*Calotropis gigantea*	Asclepiadaceae	Leaf
19	Papali	*Carica papaya*	Caricaceae	Leaf
20	Pungu	*Pongamia pinnata*	Fabaceae	Leaf
21	Seetha	*Annona squamosa*	Annonaceae	Leaf
22	Nuna	*Morinda tinctoria*	Rubiaceae	Leaf
23	Malli	*Jasminium grandiflorum*	Oleaceae	Leaf
24	Vembu	*Azadirachta indica*	Meliaceae	Leaf

8.DURATION FOR PRODUCTION OF HERBAL FERTILIZERS



Figure– 5.15: **shows duration for production of herbal fertilizers. Given Bar graph illustrates that most of the farmers take 1-2 months for production of herbal fertilizers.**

9.COST OF PRODUCTION OF HERBAL FERTILIZERS

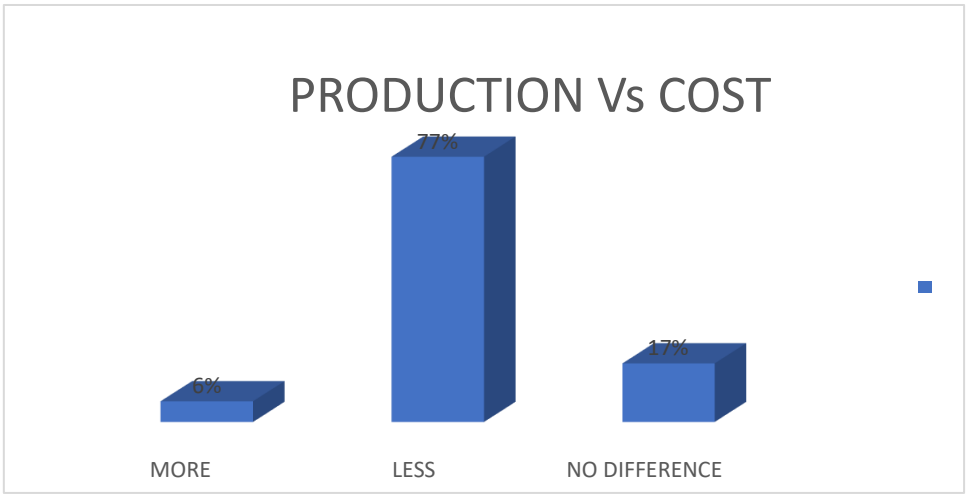


Figure – 5.16: **shows cost of production of fertilizers. Given bar graph illustrates production cost of herbal fertilizers are less.**

10.QUALITY OF CROPS

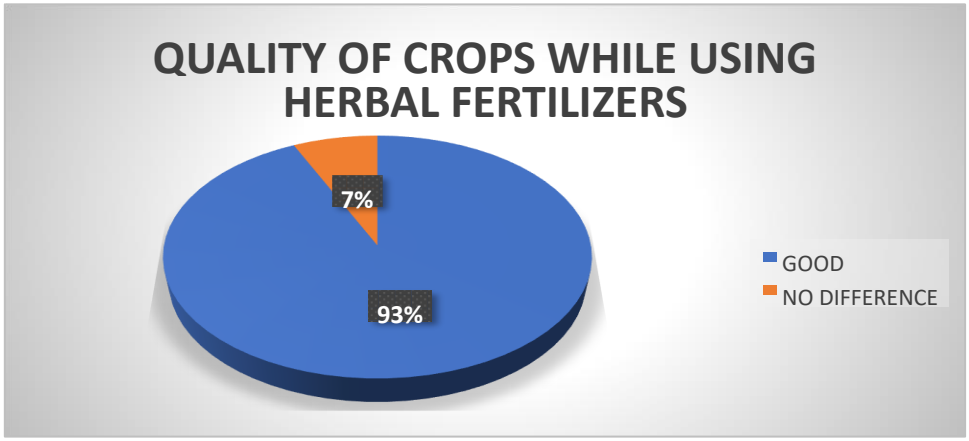


Figure- 5.17 **shows the quality of crops after using herbal fertilizers.Given pie chart illustrates that herbal fertilizers produce good quality of crops.**

11.FARMERS OPINION ABOUT INCREASING USAGE OF HERBAL FERTILIZERS IN FUTURE

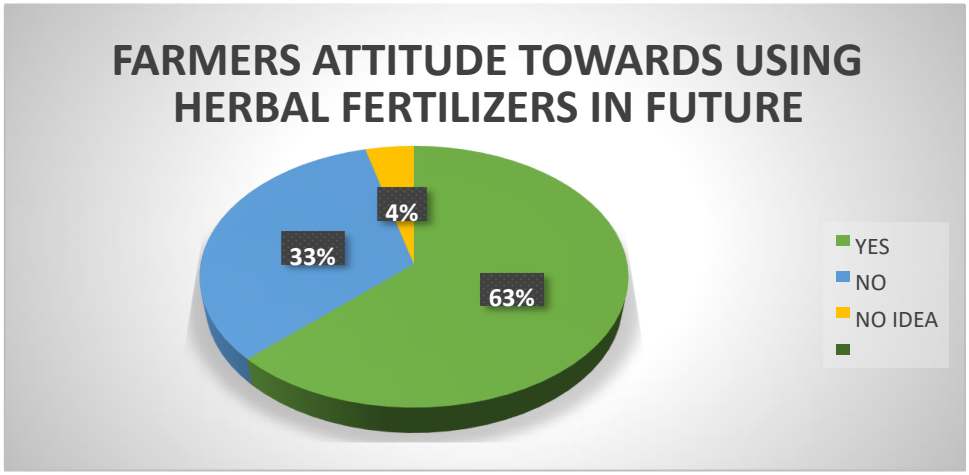


Figure- 5.18 **farmers opinion about increasing the usage of herbal fertilizers in future.Given pie chart shows 63% of farmers are planned to use herbal fertilizers in future, 33% seek for alternate methods and 4% farmers has no idea on herbal fertilizer usage.**

12. USAGE PATTERN OF HERBAL FERTILIZERS

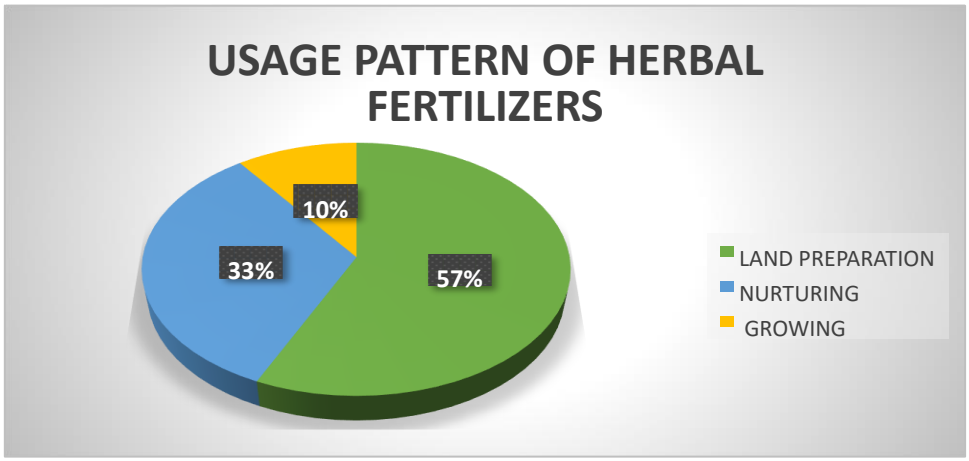


Figure- 5.19 **farmers usage pattern of herbal fertilizers. Given bar chart illustrates that most of the herbal fertilizers are used during land preparation.**

III.TRADITIONAL FARMING

1.FERTILIZERS COMMONLY USED IN TRADITIONAL FARMING

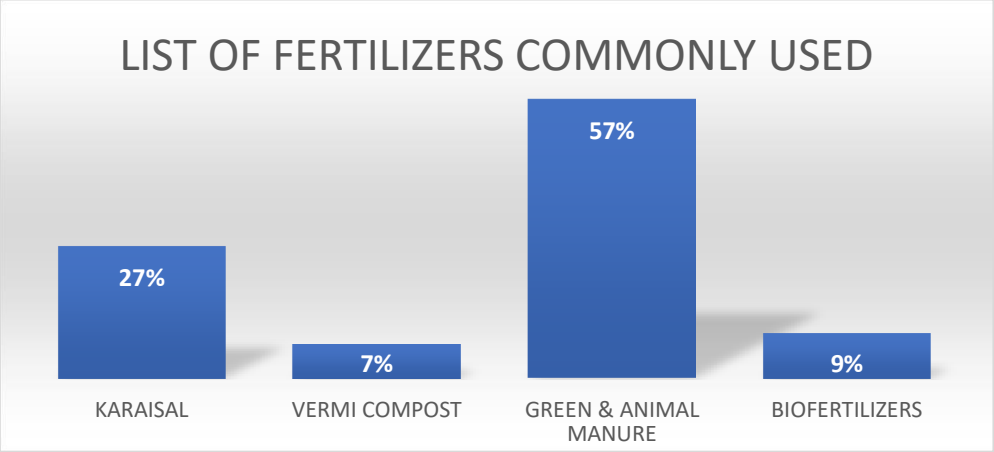


***Figure- 5.20*: shows fertilizers commonly used by farmers. Given bar chat illustrates that 57% farmers use green and animal manure ,27% use karaisal ,9% prefer biofertilizers and only 7% use vermicom posts in traditional farming method.**

2.DEMAND OF FARMERS TO INCREASE TRADITIONAL FARMING

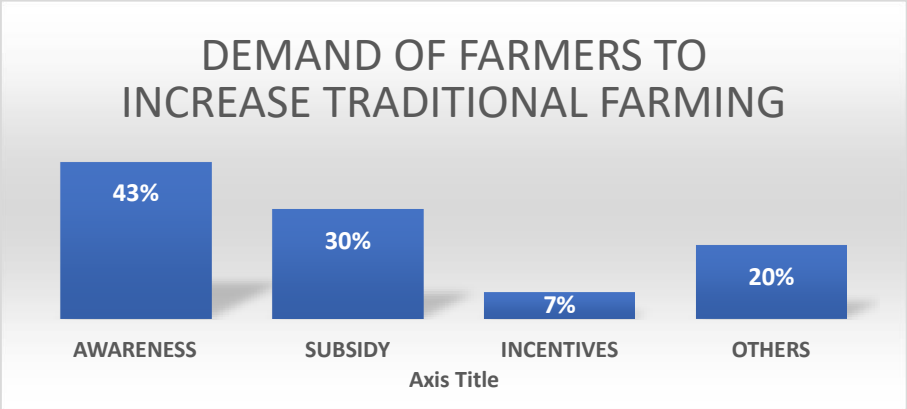


***Figure- 5.21:* shows farmers view to increase traditional farming. Given bar graph shows that 43% of farmers believe that raising awareness is the most important factor in promoting traditional farming.30% of farmers suggest that subsidies would help increase traditional farming. Only 7% of farmers think that providing additional incentives would make a difference**

3.FARMERS INTEREST ON GAINING MORE INFORMATION ABOUT TRADIONAL FARMING

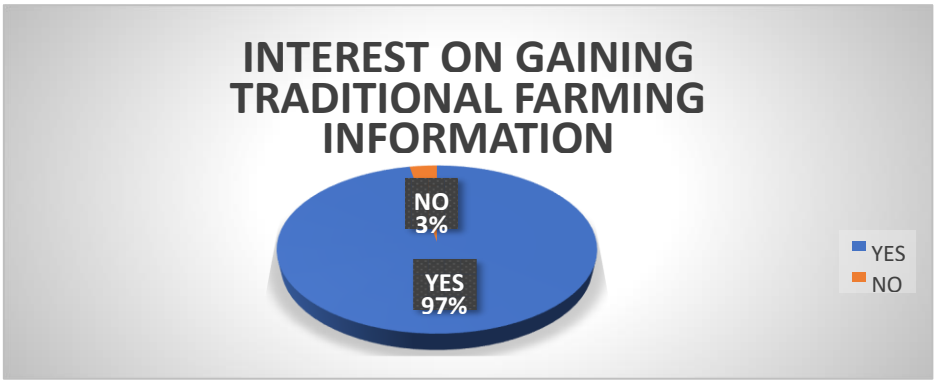


***Figure-5.22:* interest shown by farmers to get more information on traditional farming.Given pie chart illustrates that 97% farmers are interested in gaining information about traditional farming.**

4.FARMERS PLANNED TO INCREASE PRACTICE OF TRADITIONAL FARMING IN FUTURE

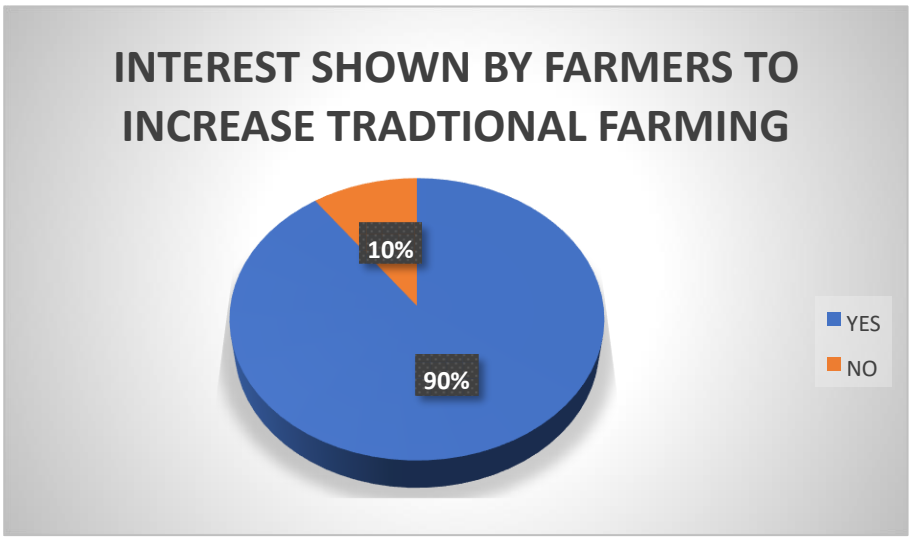


***Figure-5.23*: shows farmers plan to increase the practice of traditional farming in future.**

Given pie chart shows that 90% farmers planned to increase traditional farming

IV.DETAILS ABOUT HERBAL PESTICIDES

1.SOURCE OF INSECT REPELLENTS

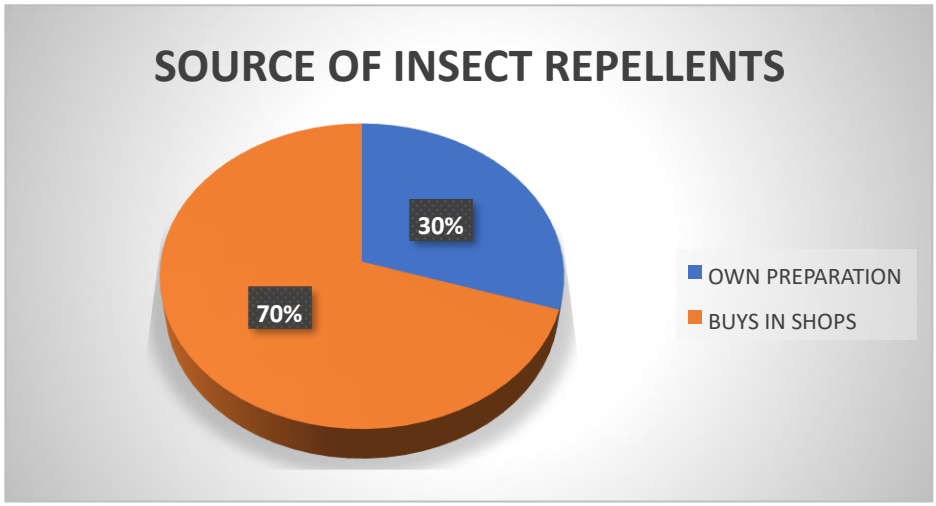


***Figure-5.24*: shows how farmers get insect repellents. Given pie chart illustrates that 70% farmers bus insect repellents in shops.**

2. INSECT RELLENT PREPARATIONS.

NEEM- TOBACCO KARAISAL

Neem 5 kg • Garlic – half kg.
Tobacco – half a kg • Cow urine 10 liters
green chillies – half kg

Grind the garlic and green chillies into a paste. Cut the tobacco into small pieces and grind it along with the neem leaves. Dissolve the ground paste in the cow urine, put it in a firewood and let it boil. When the mixture starts to boil well, keep it at the same boiling point for 10 minutes, then reduce the heat of the stove completely. After half an hour, add the jaggery again and bring to a boil. Repeat this process 4 times continuously. After boiling four times, take it off the stove, cover the mouth of the vessel with a cotton cloth and keep it in the shade for 48 hours. After two days, strain it on a thin cotton cloth and use it.

USAGE

It not only destroys the stem borer and boll worm, but also destroys the eggs of the worms inside the stem.300 ml to 500 ml per 10 liters of water.

IYNTHILAI KARAISAL

1.Neem (Azad racta Indica),
2. Erukku -(Calotropis),
3.Collinji (Debrosia purpurea),
4. Nochi (Vitex Negundo),
5. Oomathai (Dattura Metal),
6.Aamanaku (Jatropha curcus)
7. Adathoda (Adathoda vasica)
8.Pongam (Pongamia pinnata)

To prepare herbal extract, steep the leaves separately in cow urine in a ratio of 1:1 (1kg chopped leaves in 1 liter of cow water) for 10 days. The filtered solution can be used as a natural insect repellent by mixing 1 liter with 9 liters of water per 10 liter tank and spraying the crops. It is used as an active agent against insect and disease attacks

NEEM SOLUTION

Crush 5 kg of neem nuts in a sieve, wrap in a sack or thin cloth and soak in 10 liters of water for 24 hours. Then the juice can be squeezed and filtered and mixed with 200 liters of water and sprayed on the crops.

GARLIC KARAISAL

Garlic – 300 grams,
150 ml of kerosene
Soak the garlic in kerosene for 24 hours and add it to 60 liters of water and use it on one acre of land.

GINGER CHILI GARLIC SOLUTION

Take 1 kg of garlic and soak it in kerosene for 12 hours. make a fine paste. Take half a kilo of green chillies and half a kilo of ginger and grind them into a paste separately. Then grind the pastes separately and mix them well and keep them in a cloth. Dip the mixture in 6 liters of water and strain the rasa. Now we have 6 liters of solution ready.500 ml of this solution if the pest attack is low and 1 liter if the attack is heavy and mixed with 9 liters of water respectively and sprayed on the insects. A plants completely eradicates the worms.

Aloe Vera Controls Insects:

For one acre of land, if one kilogram of aloe is placed in a sack and placed in an irrigation canal, the aloe will dissolve in the water and reach the plants. By this method, not only the crops grow better but also the pest attack is reduced.

Agni Astra – Natural Pesticide:

Cows urine- 20 litre
Tobacco 1 kg
Green chillies 2 kg
Garlic 1 kg
Neem 5 kg
All these should be kept in an earthen pot and boiled well. Boil it again and again 5 times. Two and a half liters of Agni Astra and 3 liters of cows urine mixed with 100 liters of water and sprinkled on the crops will eliminate the worms.

Neem Astra: Insect repellent

Country cow dung 2 kg
Domestic cow urine 10 liters
Neem leaves 10 kg
All these should be put in a big vessel, pour 200 liters of water and soak for 48 hours. Do

not keep covered. The solution should be stirred anti-clockwise three times. Then it can be filtered and sprayed on the field. It is a good insect repellent for many types of pests.

Brahmastra: Aswani insect repellent
Nochi leaves 10 kg
Neem leaves 3 kg
Tamarind leaves 2 kg
Cows urine 10 Liters
These should be mixed with 10 liters of cows urine and prepared in an earthen pot like Agni Ashtra. Two and a half liters of Brahmastra in 100 liters of water along with 3 liters of cows urine can be sprayed on 1 acre. Spray 2 or 3 times a months

BIO PESTICIDES
Bacillius thuringenesis
Verticillium lecanni
Paecilomyces lilacinus
Metarhizium anisopliae

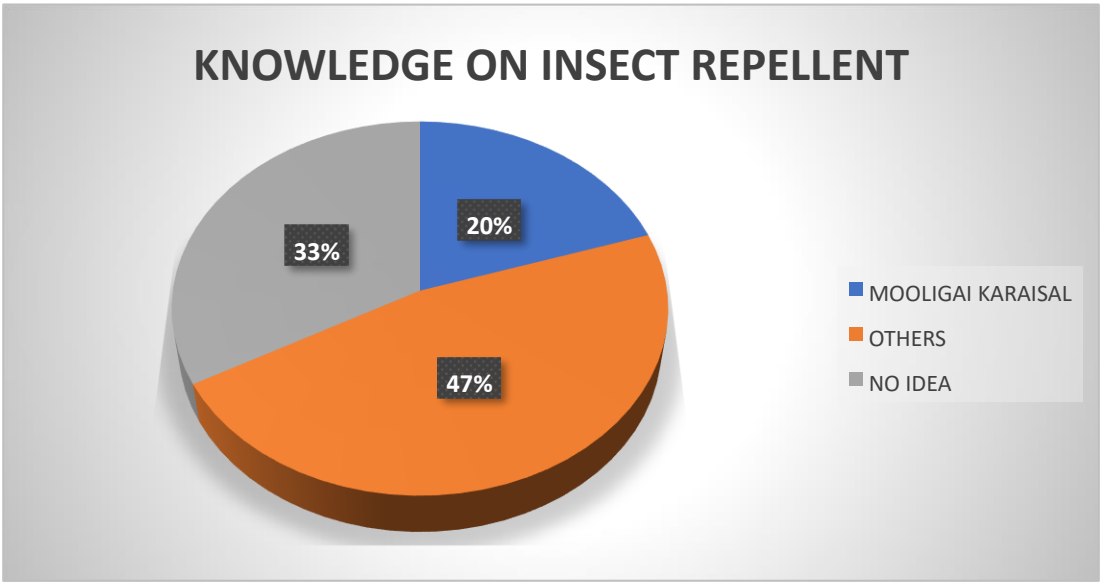


Figure-5.25 **shows commonly used insect repellent techniques**

3.COMMONLY USED HERBAL PLANTS AS INSECT REPELLENTS

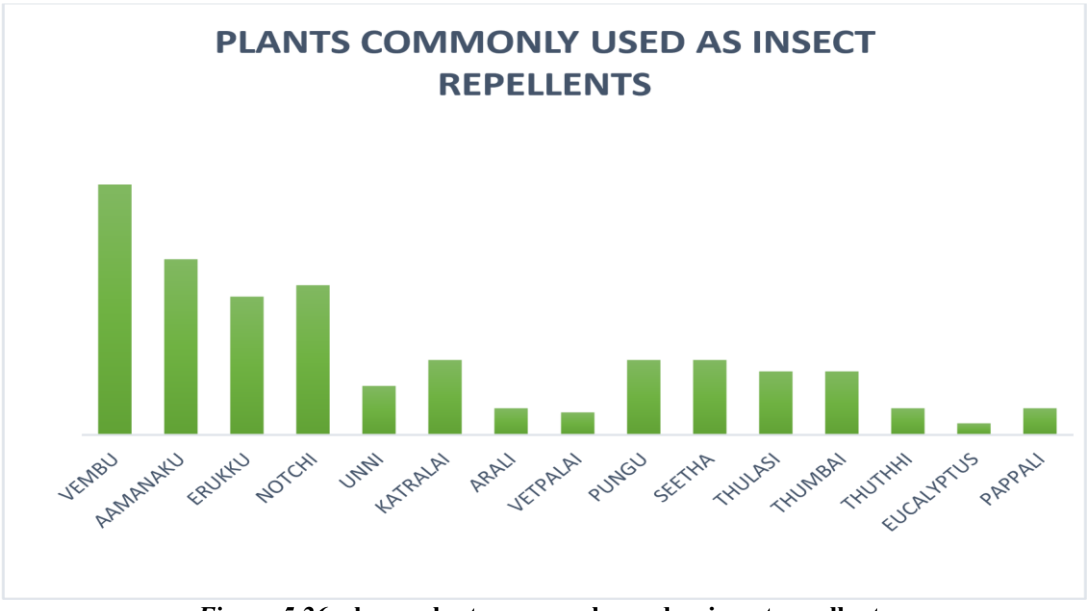


Figure-5.26: **shows plants commonly used as insect repellents**

COMMONLY USED HERBAL PLANTS USED AS INSECT REPELLENTS

Table 5.2 shows list of plants used as insect repellents

SNO	COMMON NAME	BINOMIAL NAME	FAMILY	PART USED
1	Adathodai	*Justica adathoda*	Acanthaceae	Leaf
2	Aaduthendapalai	*Aristolochia braceolata*	Aristolochiaceae	Whole plant
3	Oomathai	*Datura matel*	Solanaceae	Leaf
4	Erukku	*Calotropis gigantea*	Asclepiadaceae	Leaf
5	Thumbai	*Leucas aspera*	Lamiaceae	Whole plant
6	Thulasi	*Ocimum sanctum*	Lamiaceae	Leaf
7	Thuthi	*Abutilon indicum*	Malvaceae	Leaf
8	Katralai	*Aloe barbadensis*	Liliaceae	Whole plant
9	Pirandai	*Cissus quadrangularis*	Vitaceae	Stem,leaf
10	Peenari	*Sterculia foetida*	Malvaceae	Leaf
11	Papali	*Carica papaya*	Caricaceae	Leaf
12	Seetha	*Annona squomosa*	Annonaceae	Leaf
13	Pungu	*Pongamia pinnata*	Fabaceae	Leaf
14	Notchi	*Vitex negundo*	Lamiaceae	Leaf
15	Vembu	*Azadirachta indica*	Meliaceae	Leaf,seed
16	Thaluthalai	*Clerodendrum serratum*	Lamiaceae	Leaf
17	Aamanaku	*Ricinus communis*	Euphorbiaceae	Leaf
18	Veliparuthi	*Pergularia daemia*	Asclepiadaceae	Leaf
19	Aatruthumati	*Citrullus colocynthis*	Curcurbitaceae	Leaf
20	Unni	*Cantana camara*	Verbinaceae	Leaf
21	Nithyakalyani	*Cantharanthus roseus*	Apocynaceae	Whole plant
22	Arali	*Nerium oleander*	Apocynaceae	Leaf
23	Vetpalai	*Wrightia tinctoria*	Apocynaceae	Leaf
24	Pugalai	*Nicotiana tobacum*	Solanaceae	Leaf
25	Thyla maram	*Eucalyptus globulus*	Myrtaceae	Leaf

4.USAGE OF PATTERN OF INSECT REPELLENTS

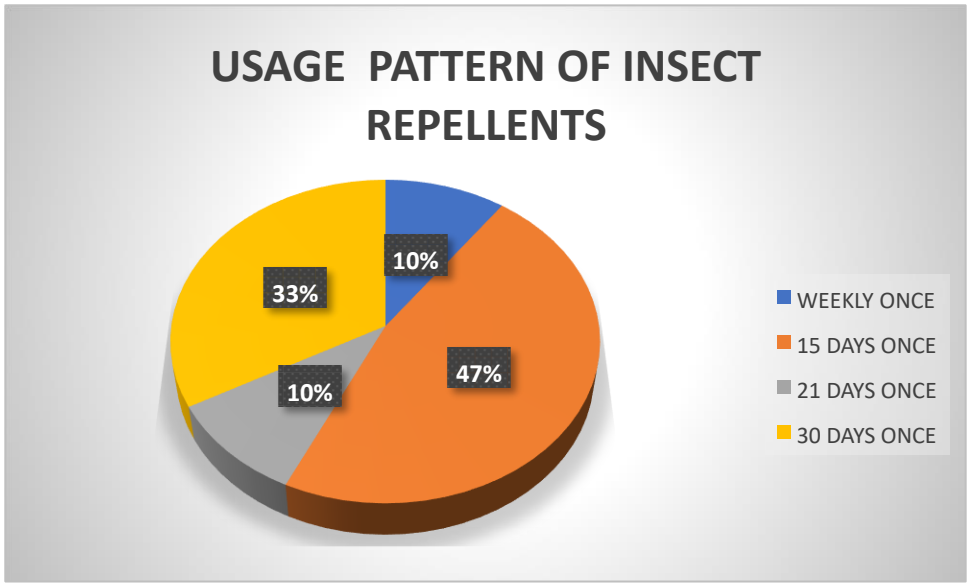


Figure-5.27: shows the usage pattern of insect repellents. Given pie chart shows that 47% farmers use insect repellents 15days once for the crops, 33% farmers use 30 days once ,10% farmers use for weekly once and 21days once for crops.

5.PRODUCTION TIME OF INSECT REPELLENTS

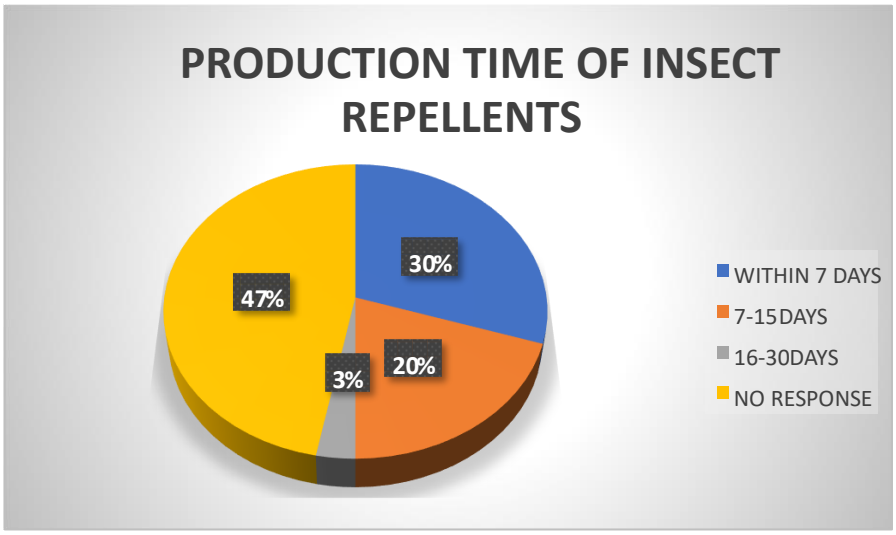


Figure- 5.27 shows time taken for production of insect repellents. Given pie chart illustrates that 47% farmers are not involved in own production of insect repellents.

6.CHALLENGE FACED WHILE HANDLING HERBAL INSECT REPELLENTS

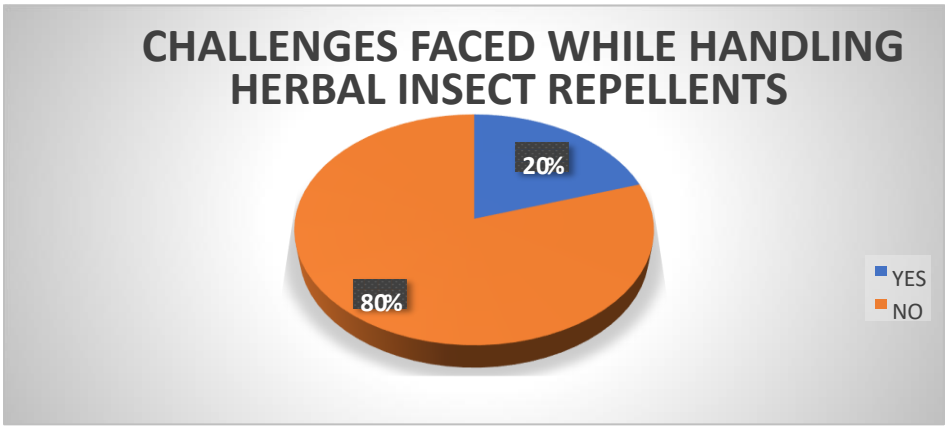


***Figure-5.28*: shows farmers difficulty in handling herbal insect repellents. Given pie chart illustrates 80% report that there is no handling difficulty of herbal pesticides while 20% faced some challenges.**

7.HOW FARMERS GOT INFORMATION ABOUT HERBAL INSECT REPELLENTS

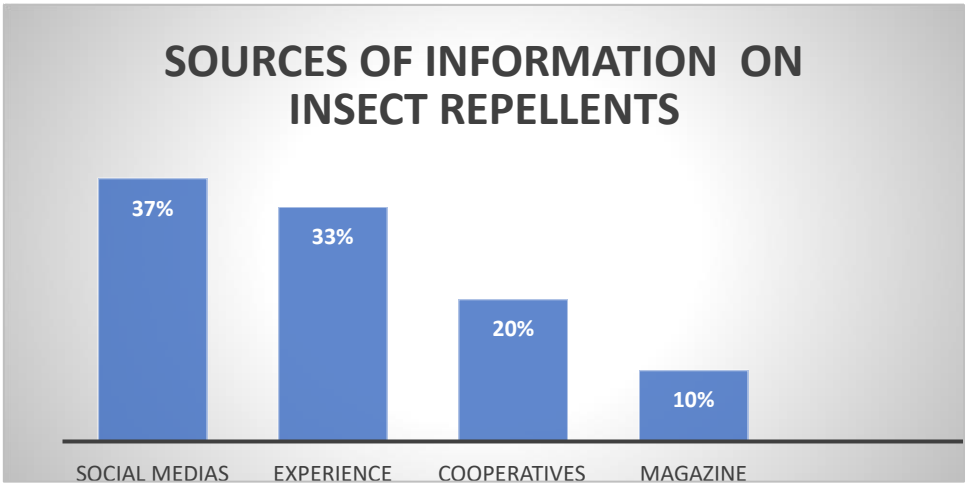


***Figure-5.29*: shows source of information for farmers about insect repellents Given bar chart shows that most of the farmers get information from social medias and experience, only few collect information from magazine.**

8.FACTORS MOTIVATE USE OF HERBAL PESTICIDES

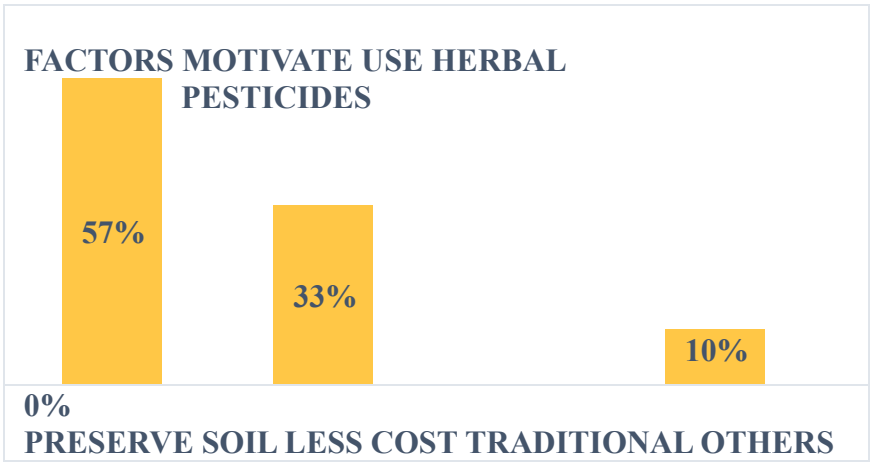


***Figure-5.30*: shows motive of farmers using insect repellents. Given bar chat illustrates that factors that motivate farmers to use herbal insecticides are less cost and to preserve soil. There is no traditional usage by farmers.**

9.METHOD OF GROWING INSECT REPELLENT PLANTS

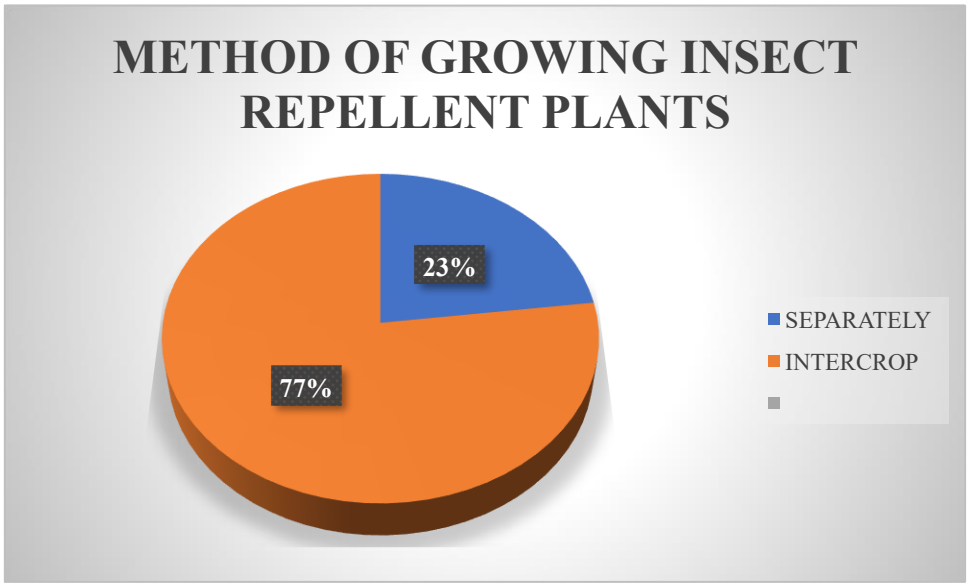


***Figure-5.31*: shows the method of growing insect repellent plants.77% plants are grown as inter crop and only 23% plants grown separately**

10.FARMERS KNOWLEDGE ON GOVERNMENT SCHEMES

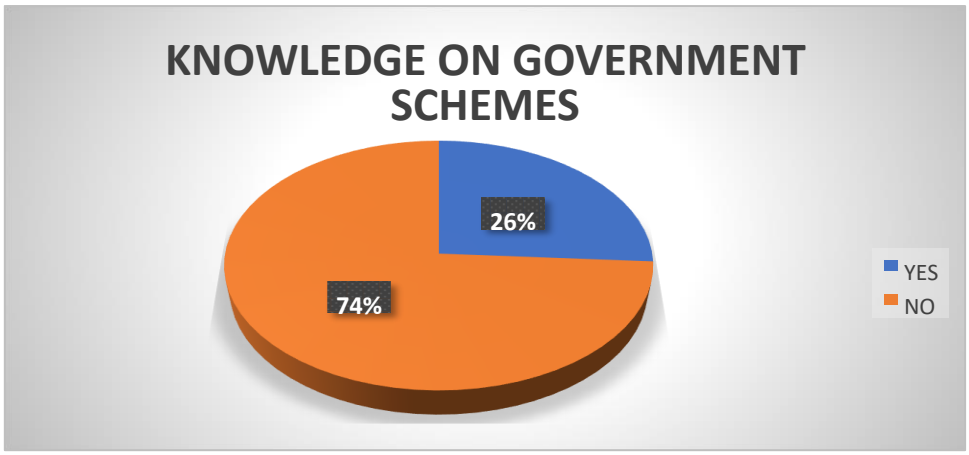


***Figure-5.32*: shows farmers knowledge on government schemes. Given pie chart shows that 74% farmers lack knowledge on government schemes.**

11.TRADITIONAL FARMING FOR MEDICINAL PLANTS GROWTH IN FUTURE

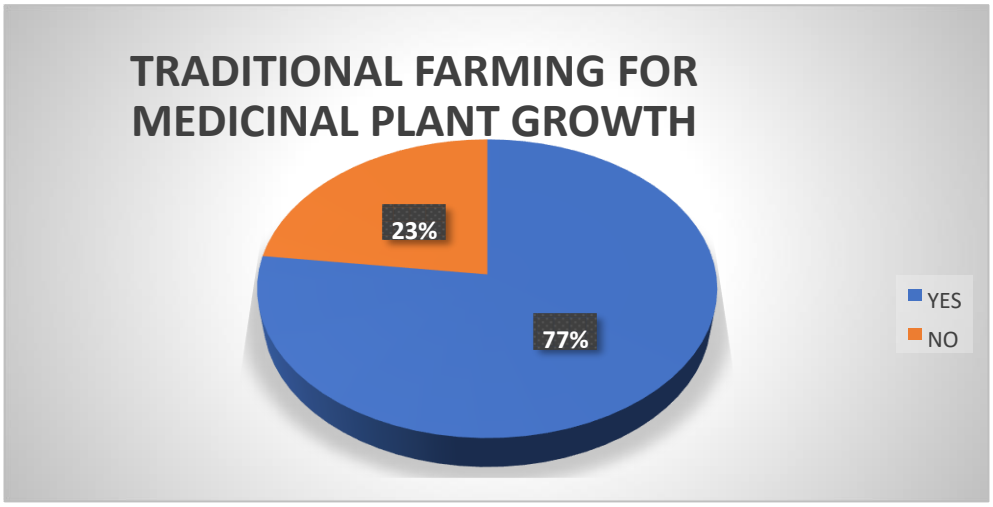


***Figure-5.33*: shows growth of medicinal plant in relation with traditional farming. Given pie chart illustrates that most of farmers responded that traditional farming promote medicinal plant growth.**

12.TYPE OF FARMING GIVES MORE PROFIT

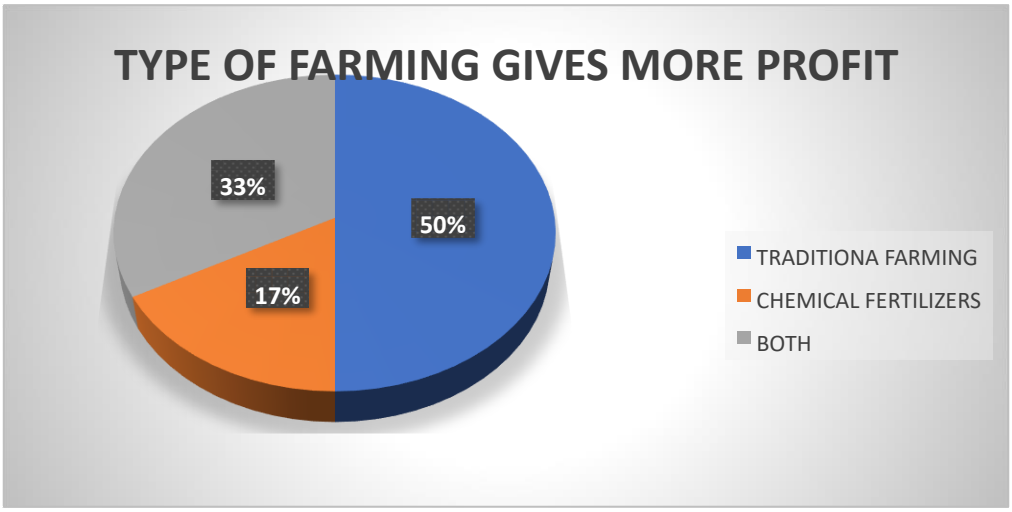


***Figure-5.34:* shows which type of farming gives more profit. Given pie chart shows that 50% farmers responded that traditional farming gives more profit while 33% farmers convey that both chemical and traditional farming can only give profits.**

DISCUSSION

The study reveals a significant inclination towards traditional farming methods, with 77% of farmers practicing traditional farmer. However, a substantial portion also uses both chemical and traditional fertilizers (57%). Farmers primarily adopt traditional fertilizers due to their benefits for soil health (23%) and cost-effectiveness (43%). These fertilizers reduce the reliance on chemical products and contribute to environmental conservation. farmers face challenges in accessing traditional fertilizers, with 33% citing availability issues, and 47% stating that more manpower is needed for traditional methods.

These challenges limit the widespread adoption of traditional practices. A high percentage (93%) of farmers reported improved crop quality when using traditional fertilizers, reaffirming their positive effects on agricultural output. Information dissemination about traditional farming methods appears to be a challenge, with 73% of farmers being unaware of government schemes supporting organic farming.

The plants most commonly used as fertilizers include *Pungam*, *Erukku*, *Vetpalai*, *Arali* and *Povarasu*, indicating the reliance on specific herbal plants for soil enrichment.The plants most commonly used as insect repellent are *vembu, aamanaku, notchi, seetha, thulasi, thumbai* are used among farmers. There is no traditional usage of insect repellents among them .77% farmers gave positive affirmation that traditional farming can promote medicinal plant cultivation in future. 90% of respondents expressed interest in continuing or adopting traditional farming methods. This suggests a significant majority believe that traditional farming still holds value and potential for future agricultural practices.

Limitations

This documentation has certain limitations. As this was conducted within the traditional healers, gaining in – depth insights into specified therapeutic indexes and diagnostic approaches were challenging. The knowledge is often kept quite confidential and transmitted within limited range. The time frame was limited, restricting detailed documentation of drug preparation, dosage and outcomes. The sample size is too small to generalize the wide aspect of knowledge and practices. Future studies should involve a large sample size, vast field work and detailed interview and questionnaire are recommended.

CONCLUSION

Most farmers showed interest in traditional farming. Steps to be taken to improve awareness of government schemes. By doing large scale study among farmers more formulas and techniques in traditional farming could be collected. Traditional farming can promote herbal plant cultivation among farmers. It also enhances the quality of herbal plants which are used in siddha medicine preparations.

Ethical Consideration:

Ethical considerations were followed during data collection, and informed consent was obtained from all participants.

Declaration by Authors

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Conflict of Interest: None

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