

Let there be a downpour of Prosperity!

Poultry, Goat Farming, Fresh Water Fish Farming and Turkey Rearing

**T**oday multifarious technological innovations have come to play in the field of agriculture. The contribution of educated youth in implementing these cutting edge technologies is greatly needed. Our villages are teeming with unemployed youth and intelligent graduates. The reluctance to take up agriculture as a profession is due to low self esteem and insecure mindset.

But agriculture has tremendous employment potential for all of them. There exist many agriculture related steams with good employment opportunities like Cold Storage, Shade Net Nursery, Green House etc. Among these, Green house cultivation is becoming quite popular today. We request our youth to shed their low self esteem and inaction and come forward to take up the challenges in agriculture with renewed vigor and vitality.

It is a pleasure to know that Tamilnadu farmers are successfully earning good profits through cultivation of grapes, bananas and vegetables. They should adopt "Integrated Farming" combining Dairy, with agriculture to achieve handsome incomes. The integrated approach helps the farmer get uninterrupted income and round the year empolyment. Prudent planning is very important before taking up Integrated Farming. The word of the wise man says "well planned is half done"

The next alarming challenge to farm lands in Tamilnadu is the depletion of nutrients due to neglect of organic manure and continuous cultivation of horticultural and cash crops. The organic carbon status and the status of micro nutrients have gone down considerably. We at SPIC are taking many effective steps to stem this trend and to put the nutrients back into the soil. Along with our chemical fertilizers we offer organic fertilizers like SPIC Surabhi, SPIC Jyothi and SPIC Dheepam; micro nutrients like SPIC nourish, SPIC Flourish and SPIC Zinc Sulphate and plant hormones like SPIC Max and SPIC Empower.

We also offer water soluble fertilizers like SPIC Triumph suitable for using with drip irrigation. Farmers should make use of these products to reap yields manifold.



Let the new era begin... Let new life blossom...

Dave

Editor, SPIC Panai Cheithi

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"Successful people are those who do things differently and innovatively. As some software entrepreneurs thought differently, they became billionaires today. This is true in the case of agriculture too. Farmers with innovative mind and creative abilities thought and acted differently and succeeded" says Mr.Arul Prakasam, an M.A (English) graduate living in Madurai Alagarkoil road. He followed his father's footsteps and fully involved himself in agriculture. Let us hear him:

"Krishnagiri and Hosur farmers are prospering with Green House farming technology, which has not reached down south districts of Tamilnadu, beyond Madurai. Why? The reason for this is the approach of the Department of Horticulture. Most of the Green House subsidies are going to Dharmapuri, Krishnagiri and Hosur area. In fact, the climate of these districts is already well suited for vegetable farming where there is no need for a green house to maintain temperature. But the hot and arid climate in districts like Thoothukudi and Ramanathapuram certainly requires green house to regularize optimum temperature and moisture. Green House creates an artificial micro climatic condition inside the tents encouraging vigorous plant metabolic activities. So my request to the Government is that these hot and dry districts require more green houses than the other places and so sanction more green houses to the dry districts. My farm is near Madurai situated in a dry climate zone. I had set up two green house projects in my land, each consisting of 25 cents (1000 sq.mts) area. Initially I was growing Cucumber in both green houses. I was earning good profits through cucumber. Soon I was very much



attracted towards cultivation of Madurai Jasmine (Madhurai Malligai), which is very famous for its fragrance and keeping quality. The flowers are exported to various countries through Madurai Airport. Attracted by this crop, I started cultivating Madurai Jasmine in one of my green houses. The major set back in Jasmine is that it does not flower well during winter season (October to January). During winter, the farmer can get only 10 grams of small flowers from one cent of land. But when we compare the winter selling price of Jasmine to summer, during summer it fetched Rs 200-500 per kg while during winter the flower fetches a very high price of Rs 1500 to 2000 per kilogram. Then I realized that if I produced more Jasmine during winter season I can make a year's profit in just four months i.e., during October to January"

"A new realization dawned on me. Why don't I

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undertake jasmine cultivation under green house? If I can create a summer like climate and temperature inside a green house then I can certainly make Jasmine blossom during winter also. I ventured into action. Among the 2 green houses I own, I converted one in such a way that I can cultivate Jasmine. The area is 25 cents and I did this only as a trial basis. My idea is that if I succeed in this new venture, I can extend this concept constructing more green houses for Jasmine cultivation"

"Generally I use grow bags for cucumber and tomato cultivation. I use to

purchase grow bags and coconut fiber fillings from a nearby place called Periakula m. Normally to cultivate cucumber grow bags measuring 1 meter in length and 9 inches breadth and 5 inches height are required. At the same time for Tomato the height of the grow bag should

be 8 inches and for Capsicum the height should be 9 inches. But certainly Madurai jasmine cannot be grown even in bigger grow bag. Jasmine roots require far more space and area, and the roots cannot be contained in a grow bag. Hence Jasmine can be cultivated only on the original land inside my green house. But the quality of the soil inside my green house is not suitable for Jasmine cultivation. The soil is clayey in nature and water stagnation will be there for almost 6 months in a year. Water seepage from an adjoining irrigation canal (that runs close to my lands) is a big problem. So I decided to replace my top soil. Using a JCB, I removed 1 ½ feet depth of top soil, and replaced it with good red soil. More over I raised the level to another 2 feet with the same red soil to avoid water stagnation. Normally in Jasmine cultivation farmers give a spacing of 2½ feet x 2½ feet between plants. But I made raised beds 4 feet wide. I maintained a distance of 5 feet between each bed. You may ask, why such high spacing? The answer is, when plants grow under Green House, the growth is vigorous and so we need to give enough room for the plant to develop. I bought Madurai Jasmine seedlings from



Thangachimadam at the rate of Rs 3 per seedling. I required 470 seedlings for 25 cents. Seedlings were planted on both sides of the raised beds. Drip irrigation tubes were laid in two rows along each bed in such a way that each dripper

supplied 8 liters of water in 1 hour"

"As hot climate is essential for Madurai jasmine to blossom, I avoided installing foggers inside the Green House. After the first irrigation was given through drip, Jasmine seedlings started to grow very fast. The growth achieved in 12 to 14 months in open field, was achieved in seven months inside my green house. In open field condition Madurai jasmine starts flowering only after one year. But inside my green house, my plants started flowering in five months. My first yield after 5<sup>a</sup> month was 1.7 Kgs (1700 grams) in 25 cents.

> "When I took the flowers to the market SPIC Pannai Cheithi, Feb - March 2015



the market rate for other Jasmine flowers was Rs 1500 per Kg, whereas my flowers fetched Rs 1800 per Kg because my flowers were more robust and bright. During the period from October to December my produce fetched Rs 1500 to Rs 2000 per kg. The peak price was during November, when I was able to get Rs 2000 per kg. I was regularly getting an average yield one kg every day. At present my plants are young and only 7 months old but I am able to get an income of Rs 22,500 per month. The yield per day ranges from 1 Kg to 1 ½ Kgs. When the plants become 1 <sup>1</sup>/<sub>2</sub> years old they will grow dense and by that time, I expect a yield of 5 to 7 Kgs per day. Even if I sell at an average rate of Rs 500 per kg, I will get Rs 75,000 per month. When the yield reaches to that level certainly I hope that I can earn Rs 9 lakhs per year if there is no adversity. The main expenditure during Jasmine cultivation is the wages we pay to the labourers who pluck the flowers. Madurai jasmine should be plucked early in the morning. Then, the produce should reach the market immediately. The earlier it reaches the market the better will be the profits. So labourers should come early in the morning and start harvesting. Madurai

jasmine requires plenty of sunlight. If we provide continued light even during the night time plants can perform better with high yield. So, I am planning to set up solar lighting . One of the advantages of green house farming is low incidence of pest and diseases. The protected environment keeps the pests away. But it is not so easy with diseases. We use chemical pesticides and fungicides in a limited way only. For bud worm attack, I use chlorpyrifos."

"The number of educated people involved in agriculture is fewer because of so many

reasons. Educated young farmers should take up agriculture as profession. Then only modern technologies can be introduced. Some of the traditional farmers are accustomed to freebies and they don't expect the government to do any thing except freebies. But I want the government to intervene in farmers' problems. The main problem for agriculturists is the involvement of intermediaries in the agricultural produce marketing. Farmers toil and produce commodities, braving natural and man made adversaries. But the intermediaries corner the bulk of the profits. The government must come forward to eradicate intermediaries completely and free the market from these enemies of agriculture. But today



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the government is ready to provide subsidies for fertilizers, equipments and free electricity but the returns received by the farmers for their produce is not adequate. The entire society, including the general public, government functionaries and the political spectrum are benefited by farmers but not the farmers. Farmers should be well looked after. My ambition for a brighter farm



**P**roducts are marketed not by advertisements alone. A product may sell well due to intense advertisements for some time but if the quality is not up to the expectations of consumers, sales will drastically come down. Quality is the only assurance for permanent profits, and sustained sales.

Upon this principle, a new organic fertiliser SPIC SURABHI was created. The popularity of SPIC SURABHI has crossed Tamilnadu's borders and reached neighbouring states of Andhra, Karnataka and Kerala. Generally, oil cakes are best natural fertilizers for future is that the whole lot of subsidy system should be abolished whereby farmers should be able to get a decent, minimum procurement prices for their agricultural produce taking into consideration the cost of cultivation. Once the profitably increases, farming will function like any other profitable industry and the woes of poor farmers will be totally eradicated".

agricultural lands and they are used traditionally. The proteins in oil cakes get converted into nitrogen in the soil. Excellent growth of microbes is witnessed in nitrogen fixated soil, fertilized by oil cakes. SPIC Surabi is full of oil cakes.

Mr. Raju is a farmer from Hosadurga in Karnataka State. He has 3 acres of land under pomegranate cultivation. He had applied one kilo gram of SPIC Surabhi to every pomegranate plant. The plants took strong roots and grew well. The fruits were of good quality. They were big, tasty, shining and weighty. Each fruit weighed 350 grams and each plant yielded about 45 Kgs of fruits. Because the fruits were of good quality, they fetched a price of Rs 95 per kg. He had planted pomegranates in 3 <sup>1</sup>/<sub>2</sub> acres of land. He proudly states that he earned an income of 38.5 lakhs. He requests all farmers to use SPIC Surabhi and reap good profits in the same manner as he did.



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**R**anikhet is the most deadly viral disease that attacks chicken and kills them. The culprit is a virus called paramyxo virus. The signs of ranikhet disease are :

1. Breathing difficulty with acute gasping for breath

2. Diarrhea with white liquid faeces. Ranikhet is the major cause of death in chicken.

Poultry rearing is a fast growing business. Major poultry producers vaccinate their chicken correctly and save them. But people who rear chicken in their backyards are not very particular about vaccinating

them. There are plenty of reasons for not vaccinating the birds like social, economical medical etc. Because of this, Paramyxo virus attacks these birds and produces Ranikhet disease; apart from killing droves of birds, the virus also spreads to other birds. Preventive measures must be taken to save backyard chicken as well as farmyard poultry. Tamilnadu veterinary Science University has introduced a oral pellet vaccine for prevention of Ranikhet disease. There are 3 ways of feeding the chicken with oral pellet vaccines. These methods are highly suitable for the farmers who rear back yard poultry at home in small scale.

1. One or two pellets are fed to a single chick orally.

 Pellets can be placed on spread newspapers, in the morning and evening. Chicken will feed on this.

3. Pellets can be mixed in chicken feed and given to chicken. One or two pellets should be fed to every single chick. No adverse effect is noticed even if more pellets are eaten by chicken. These pellets stop Ranikhet and

death, resulting in increased profits.

Dosage of pellet vaccine: 1. One or two pellets are to be fed or ally to hatchlings on the tenth day after hatching.

2. One or two pellets are to be fed on the eighth week old chick after hatching

3. One are two pellets are to be administered orally

on the 16th week after hatching. Benefits of pellet vaccine:

1. Very easy to feed the pellets to chicken

2. There is no need to physically take the chicken to veterinary hospitals.

3. Even lay men can feed these vaccines

- 4. Reduced expenditure
- 5. Labourers are not needed.

6. Percentage of death is drastically reduced.

q

A on the 16 th



Jasmine is a wonderful flower crop which can give high returns to the farmers. The cultivation is labour intensive. So wherever women labourers are available in plenty, Jasmine cultivation can be taken up. Picking of flowers starts early in the morning and only women labourers can do the picking patiently and deftly. Jasmine is exported to other countries. Concrete extraction is another lucrative business and many industries have started up in recent years.

Many jasmine farmers keep their plants for even 15 years, in the same land. Under these circumstances, if right nutrients are not applied, flower yields will suffer. To correct this, 10 Kgs of farmyard manure, 130 grams of DAP, 15 grams of urea and 100 grams of potash should be applied to every plant twice in a year, once in July and once in November. If the leaves appear pale, for 1 liter of water, a mixture of 2.5 grams of zinc sulphate, 5 grams of magnesium sulphate, and 5 grams of ferrous sulphate should be dissolved and sprinkled on the plant. This sprinkling should be repeated 2 to 3 times, every fifteen days until the leaves turn green. "Boom flower" is a growth hormone. This contains nitrobenzene, which stimulates flowering in flower plants. It increases flowering in jasmine particularly. This hormone is absorbed by leaves easily after spraying. This hormone stimulates the plants to absorb more nutrients from soil and grow well. Once in a month 2ml of "Boom flower"



should be mixed in one liter of water and sprayed on the entire plant with a hand sprayer, in such a way that the entire plant is wetted. Bloom flower cannot be mixed with zinc, sulphur and calcium based chemicals for spraying. Boom flower can be mixed with other chemicals based insecticides for spraying. Boom flower is available in 100 ml, 200 ml, 1 liter and 5 liter packs. Use the products as instructed and get benefited.

# Soil Health is Nation's Wealth

## Save Water and Save the Earth



Mr. Vijayarangan is a leading agriculturist from Rengappa naicker patti. He has taken up agriculture as his full time profession for the past twenty years. He always employs new technologies that

come forth in the agricultural horizon. He shows keen interest to buy and use new age fertilizers that arrive in the market. Guava is his main crop. During the last few years, water had become scarce in his area due to inadequate rains. So, he had switched over to drip irrigation and sprinkler irrigation. He had profited handsomely by using SPIC Surabhi for his green chillies and tube rose flowers cultivation.

"I have 8 acres of land. I cultivate Guava in 5 acres, and vegetables and tube rose in the rest. I am an avid reader of SPIC Pannai Cheithy for the past 20 years and benefitted hugely because of it. I came to know about new technologies and new fertilizers through SPIC Pannai Cheithy."

"I give equal importance to chemical and organic fertilizers, but more importance to natural fertilizers. I apply both natural and chemical fertilizers to my crops. Two years back, I raised BRIJWAL hybrid tube rose in ¾ acre of land. Initially I used 300 Kgs of seed tubers to cultivate ¾ acre. When I came to know about SPIC Surabhi through SPIC Pannai Cheithy, I applied 50Kgs to the soil as basal fertilizer.



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I further applied two tractor loads of well decomposed farm yard manure to the soil. After ploughing and preparing the land, raised beds were formed with the spacing of 2  $\frac{1}{2}$  feet between each bed. On each bed seed bulbs were planted in triangular shape keeping a distance of  $2\frac{1}{2}$  feet. Six months passed by after planting seed material. Then I applied 1 bag of SPIC Surabi, 1 bag of SPIC D.A.P and 20 Kgs of ground nut oil cake. This top dressing was done every month. The first harvest occurred 6 months after planting of the seeds. From the 8th month onwards I harvested 15 Kgs of tube rose flowers everyday from the <sup>3</sup>⁄<sub>4</sub> acre of land. This continued for two years only because I applied SPIC Surabi.

The following benefits occurred when I applied SPIC Surabhi:

- Root rot (tuber rot) disease was avoided.
- 2. Soil health improved
- 3. The flower bearing stems were thick.
- 4. The plants were bright green and well nourished.
- 5. The flowers were big and weighed more.
- 6. The harvest was steady and continuous.
- 7. Because I mixed SPIC Surabhi and Organic fertilizers with chemical fertilizer the yield was steady and plenty. My flowers fetched high price during marriage season.
- 8. The seed bulbs obtained from the land for planting were robust and not affected by rot even after forty days due to SPIC Surabi.

"Usually Tube Rose gives good yield for up to two years. Then the yield will start declining. Now I have started cultivating Tube rose in 1 a c r e in a n e w piece of land. I have used the seed material collected from my own field which is quite healthy. I am selling this seed material to other farmers also"

"Having tasted success in tube rose cultivation, I have planted chillies in 1 acre of land. It is almost two months old now. I have applied 40 kgs of SPIC Surabhi and 50 Kgs of SPIC DAP as basal fertilizer. As top dressing, 20 kgs of SPIC Surabhi and 20 Kgs of SPIC 20:20:0:13 were thoroughly mixed and applied. I am expecting the Chillies crop to bring out flower and pods anytime. The plants are healthy and robust. I have decided to increase the dosage of fertilizers as the plants grow. SPIC Surabhi is organic and hence even if higher dosage is applied it is not going to harm the soil or crop. By this I am giving a word of advice to my fellow agriculturists. SPIC is a great company which not only produces chemical fertilizers but also very good and high quality organic agricultural inputs like SPIC Surabi, SPIC Jeyanthy, SPIC Max etc. Use these inputs and reap high profits"



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TDS in the fruit juice is 9.5 brix. Vitamin C content is 140 mg for 150 grams of the fruit (TDS=Total Dissolved Solids). Lucknow 49: These fruits are called Sardar. The fruits are round or egg shaped and weigh 90 to 140 grams. The TDS of the fruit is 9.5 brix. 150 grams of this fruit contains 130 mg of vitamin C

Nagpur seedless: Fruits are medium sized weighing 70 to 80 grams. Flesh of the fruits is

Guava is a hard fruit plant. Hence it is suited well for saline soil and arid dry lands with scarce water. Guava will give good yield even when fertilizer and water are scarce. Guava can be grown in lands where soil pH varies beween 4.5 to 8.5. To get a quality harvest, defined winter season is essential. Guava is a tropical and semi arid fruit tree that grows well in places up to 1000 meters above sea level. This is also a rainfed crop. Guava cannot be cultivated in very cold climates. In Tamilnadu guava is cultivated in Coimbatore, Madurai, Ramnad and Kanyakumari districts.

Guava is also called poor man's apple . The fruit contains a good quantity of vitamin 'C' . Every 100 grams of the flesh contains 100 to 260 milligrams of vitamin C, and moderate amounts of calcium. The 'C' vitamin stays in the fruit even if it is made into jelly.

The popular varieties of Guava:

Allahabad Safedha: A strong bushy tree with dense foliage. Fruits are shiny and round. Each fruit weighs between 90 to 150 grams. Flesh is white in colour. The total white in colour. Fruits are tasty with good aroma.

Red Flesh : Fruits are medium sized, with round or oblong shape. While the fruit is red or yellow in colour, the flesh is pink.

Seedless : The cream and yellow coloured fruits have thick flesh. The fruits are oblong in shape and tasty.

Propagation of Guava: It takes a long time for guava to be propagated through seeds. The traditional way of propagating guava is through layering. The two ways of layering are:

Ground layering or mound layering.
Air layering.



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Grafing: This is is another popular method. 2000ppm of butyric acid and 500 ppm of naphthalene acetic acid are mixed to form a growth enhancer. Soft tender grafts are dipped in this growth stimulant and planted in green houses with fogger to enhance root growth. The horticultural station for sub tropical plants in Lucknow has introduced wedge grafting method for guava, by which lot of plants can be produced easily.

Higher dense Planting Method: Seedlings from the polythene seedling bags are taken carefully without disturbing the soil around root zone and planted in 0.5m x 0.5m x 0.5m pits. In dense planting method, the distance between each seedling should be 3m x 6m. In this method 555 seedlings can be accommodated in a hectare of land area. In higher dense planting method, the distance

between each seedling is further reduced to1m x 2m to accommodate 5000 seedlings in 1 hectare.

Fertiliser Management:\_For fruiting trees, for each tree 50 Kgs of well decomposed farm yard manure, mixed with nitrogen,

phosphate and potash should be applied. These fertilizers are to be divided and applied in 2 doses one during March and another during October. Fertilizers should be applied 15 cm away from the main trunk of the tree. After digging the soil around the base of the plant fertilizer mixture should be applied, covered with soil and irrigated immediately. Fertilizer should also be given through leaf spraying once during March and then during October. For this Urea 0.5%and zinc sulphate 0.5% are dissolved in water and sprayed on leaves. Sometimes micronutrient deficiency appears in Guava. To treat the deficiency a mixture of zinc sulphate, magnesium sulphate, manganese sulphate and ferrous sulphate are sprayed in various stages. Micro nutrient spraying should be given once when the leaves appear and then during flowering and then during fruition.

Water Management: Guava can withstand dry weather. Plants should be watered every 10 to 15 days. Drip irrigation method should be used for good yield.

Pruning and Shaping :\_When the main stem reaches 80 to 90 cms, the shoot tip is pruned. Now plant will start branching in all 4 sides. Sprouts and shoots from the base of the tree are removed. Dry and old



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branches are removed. Bordeaux paste is applied on the cut surface. Flowering will commence from new branches. After harvest mild pruning is required to bring out fresh leaves and flowers. In Tamilnadu, pruning is done in the months of February and September, to encourage new sprouts. 10 to 15 cms from the tip of all shoots that developed in the last season are to be removed. In some areas of Maharashtra roots are pruned for better yield. When pruning is undertaken new leaves start sprouting and fresh flower initiation takes place. This encourages flowering and fruiting in fresh branches. The trees that tend to grow tall are bent and the tip is tied to the ground. This also brings forth flowering and fruits. Again pruning is done to new shoots in September. When the diameter of fruits reaches 2.3 cms, all branches that sprouted from the last season are pruned. The branches that sprouted from the third pruning will bring forth very good yield. If careful pruning is done, fruits can be harvested thrice in a year.

### FLOWERING AND FRUIT SET

Two important seasons of blooming are observed, one in April-May (Monsoon Crop) and the other in September - October (Winter Crop). Growth regulators like NAA, NAD, and 2,4-D are very effective in thinning of flowers and manipulating the cropping season.

Fruit drop in guava is as severe as 45-65% due to different physiological and environmental factors. Spraying of GA is highly effective in reducing the drop.

### **PEST MANAGEMENT**

Fruit fly, mealy bug, scale insects, etc. are the major pests in guava. The following measures are adopted to control the damage done by these pests:

### 1.Fruit fly:

- (a) Spraying of chemicals like malathion 2 ml, phosphamidon 0.5 ml per l of water.
- (b) Destruction of infected fruits and clean cultivation.
- 2. Mealybug:
- (a) Soil treatment with aldrin, malathion, thimet, ete
- (b) Banding the base of the plant with polythene film to prevent the nymph from climbing up from the soil.
- (c) Spraying of methyl parathion , mono crotophos or dimethoate.
- 3. Scale insect : Spraying of fish oil rosin soap with water or crude oil emulsion, dimetholate, methyl demiton, etc.

### **DISEASE MANAGEMENT**

Wilt disease: Wilt is the most serious fungal disease. Bearing trees, once affected, slowly die away. Drenching the soil at trunk bases with brasicol and spraying the plant with bavistin at early stage of infection minimise the damage. Injecting 8-Quinolonol sulphate is also effective.



SPIC produces all types of fertilizers, chemicals, plant growth enhancers and micro nutrients required by the farmers. The dealers of SPIC products do great service by bringing the products to the door steps of the farmers. Their contribution is immense. A unique competition was arranged for sellers of SPIC products. The competition was sort of exhibition. They should arrange all SPIC products in a very attractive way in their sales outlets. The display should attract the minds and eyes of all agriculturists. Those who arranged SPIC products in the most innovative and attractive way would be given prizes. Many shop owners had arranged and decorated SPIC products in innovative and attractive patterns. The competition was held from 15.12.2014 to 14.01.2015. Officers from SPIC Head Office had inspected all the input outlets that participated and evaluated. Winners in the competition were selected. News about the winners will be published in the next issue.



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# Agniasthiram that Destroys Pests

"Sakthivelu, even if there is high voltage, this problem will prevail so look into it and solve accordingly" These were the exact words Mrs. Lakshmi Elango was speaking over cell phone to a farm electrician when we visited her in her farm. We were baffled at her wits. How clever is she in identifying an electric problem in the farm. When we asked for an interview she accepted with a kind of reluctance. But the interview was interesting. Her husband, Mr. Elango said "My wife knows more about agriculture than I. She is the one who looks after agriculture solely and so whatever you want to know please ask her and leave me alone"

An avid agriculturist Mrs. Lakshmi was tired because we met her in the evening after she toiled all along the day. She appeared simple and modest, but something told us that she is an idealist with vision. She started giving us the interview.

"I have 10 years of experience in agriculture. I



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was an ordinary house wife before. My husband Mr. Elango was looking after both his cotton business and agriculture. I used to read a lot of magazines. I liked agricultural magazines very much. When I read about successful farmers, I was greatly inspired and attracted to agriculture. Then I started going to the farm regularly. I started implementing the ideas I received from the

magazines. As the labourers did not implement my ideas perfectly, I started working myself. After sending my children to school in the morning and attending to my husband, I come to the farm. The farm is 10 Kms from Dindigul. My husband had bought me a scooty. He is very encouraging and supportive. When I offered to look after the lands his workload was greatly reduced. As I started engaging myself in agriculture which is a useful business, my time was also not wasted and I got fully engaged. Right from the start, I was very much fascinated to organic farming. But at the same time, I am not against chemical fertilizers and pesticides. Please look at that paddy field in front of you. It is a variety called ADT 45. I cultivated this paddy using only organic inputs."

"Ten years back, we had leased out our land to local farmers. As we were not able to get any decent lease we decide to do for ourselves and took the lands back from the



lessee. We started to cultivate coconut and banana. As inter cropping, we cultivated black gram, cow peas and water melon. Only at that time I entered in to the picture. When I first planted Tube rose, it was a huge failure initially. Because I was new to agriculture and the concept of organic farming without experience was difficult to understand. was just a book worm. The people around me and neighboring farmers discouraged and started mocking at. They were making comments like, 'what this little lady is going to do in agriculture? Is she going to do something different? Certainly she is going to incur only loses in agriculture. They also said that she will soon pack up and go'. But I did not leave agriculture. Before their very eyes I wanted to show success. I wanted to prove to those who spoke ill of me that a lady can do agriculture successfully. My grit, steadfastness and persistence paid me well. For the first time I cultivated ADT 45 in 25 cents organically and it became a success. got 8 bags of Paddy yield. Each bag weighs 75



Kgs and so I got 600 Kgs of paddy from 25 cents of land. Though the yield was not a big number, that venture was my first successful cultivation. I personally took the paddy for milling. When I cooked that rice and served to my family, appreciation came from my father in law's mouth. He said that he has not eaten such tasty rice since his childhood. I felt like a big crown was festooned on my head"

"My paddy was severely attacked by mites

and pests. Even then I did not use chemical pesticides. Through experience I came to understand that the only way to organically eradicate pests is spraying "Agniasthiram" I learnt how to concoct agniasthiram. I sprayed agniasthiram thrice on my organic paddy, and eradicated the pests. I thoroughly learnt the procedure of making agniasthiram and use only that on all crops. I will explain how I made my own Agniasthiram Ingredients:

1.	Tot	Dace	CO	
2.	Gre	en	Chi	llies

- 3. Garlic
  - − ½ kg
- 4. Neem Leaves
- 2 ½ kg

 $\frac{1}{2}$  kg

½ kg

5.Cow's urine – 10 liters. All ingredients are thoroughly

pounded and mixed well with cow's urine. The mixture is poured into an earthern pot and boiled. After boiling 3 times, the pot is kept undisturbed for 24 hours for cooling. Then the liquid

is filtered, separated and stored in a big vessel. This is a potent bio-pesticide and this liquid is called 'agniasthiram'. This can be stored and used for a period of 3 months. To spray 1 acre of field, 1 litre Agniasthiram is required. 100 ml of agniasthiram is mixed with 10 litres or 1 spray tank full of water. This can be sprayed on all crops as pesticide. Early spraying is necessary i.e. when the pest is noticed in young stage spraying should be



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done. Agniasthiram can eradicate even mealy bug"

"Pests like Coccinellid beetle can be eradicated just by spraying raw cow dung. Take raw cow dung in a bucket of water dissolve it in water and sprinkle on the crop with hand. The beetles will flee. When you go for bio pesticides, don't spray a same kind again and again. Different bio pesticides must be used alternatively".

"Let me explain to you about another bio pesticide. It is a simple way of doing an effective bio pesticide. Crows eat neem fruit and litter neem seeds in plenty under the neem tree. With these seeds neem concoction pesticide can be prepared. The neem seeds should be of good quality. So I don't buy them from outside agencies. I personally collect them under the neem trees. During the neem fruiting season, birds eat the seeds and drop them. These seeds mixed with the birds' excrement have a potent value. I will use only such seeds collected carefully by me. One kg of neem seeds are mixed with  $\frac{1}{2}$  kg of garlic. This mixture is thoroughly pounded to pulp. Ten liters of cow's urine is added and mixed well. This is kept in an earthern pot or plastic bucket for 4 to 5 days. But do not use metal vessels for this purpose. Then the liquid is filtered with the help of a thin cotton cloth. The filtrate will act as a good bio-pesticide. This bio-pesticide should not be stored in metal pots. Use earthern pots for all the preparation and storage"

"You can see lot of coconut trees in our farm. Rhinoceros beetles are the biggest problem. They bore into the crown of the coconut tree to reach and eat unopened



fronds and spathes. This also can be controlled in organic way. To control rhinoceros beetle I use another powerful bio pesticide. I gather leaves of Calotropis (Erukkai in Tamil) plant from nearby area. I thoroughly pound these leaves, put them in an earthern pot and mix well with water. Cover the mouth of the pot with cloth and leave it. After 3 days I add (about 200 grams) neem seed powder to this concoction. I keep these pots containing this concoction in 4 or 5 places randomly in my coconut plantation. When the leaves get fermented it exudes a strange rotten smell that attracts rhinoceros beetles. The beetles plunge into the pot and die instantly because this concoction is a deadly bio-pesticide".

"Now I have planted Brijwal Tuberose in 60 cents. This I did in March last year. Since July, I am harvesting these flowers. In November I got a maximum yield of 45 kgs per day. It was sold for Rs 20 per kg. Flowers are plucked daily and sent to the market. On an average the yield now is 15 to 20 kgs a day. But the market rate is Rs 40 per kg. I earn around Rs 24,000 a month from Tuberose alone. I have applied mulching sheet technology. I also have laid drip irrigation as well as sprinkler irrigation for the tube rose crop. In another area, I have cultivated groundnut in one acre and paddy in 60 cents. For my entire home needs I only depend on organic farming. I earn around Rs 30000 as profit per month from my farm. I have also given employment to 4 to 5 men on permanent basis. I am very happy because the environment is protected because of organic farming. I have become one with nature and self supporting. Any amount of money cannot bring the satisfaction and joy I derive from my work. Altogether, I am a very happy lady today"



Keelanelli is an important medicinal plant used in all streams of medical practices. The life cycle of Keelanelli is short. It can be cultivated easily in tropical and sub tropical climates. This is a rare medicinal plant that has multifarious medicinal properties. This is a very important medicinal plant in Indian Medicine. The root, stem and leaves are used as medicine. Dried stems and leaves are powdered, mixed in water or milk and taken as a tonic. Keelanelli is a major medicine for jaundice. It is a diuretic that cools the body. It boosts immunity in the body and

cures boils, inflammation and skin infections. It also reduces obesity. Keelanelli is the major treatment in Indian Medicine for problems of liver, kidney, spleen, reduced vision, migraine, anemia, continuous nasal discharge, nyctalopia (night blindness), and sinusitis.



One can even go to the extent of saying that there is no other crop that brings so much profit like banana. The areas under banana cultivation are increasing day by day in Tamilnadu. The simple reason is this: Every single farmer who has maintained perfect soil health and undertaken banana cultivation under precision farming plan has reaped profits to the tune of rupees two lakhs and even more. Almost 50% of bananas that are produced in this entire world are produced in Asian countries. Tamilnadu is the 'Numero Uno' producer of bananas in India. The most skillful farmers of Tamilnadu produce an average 50 tonnes/ acre, and stand first in India. Tamilnadu is very famous for banana cultivation.

Let us get down to the brass tacks of banana cultivation. One major factor that influences yield is the cultivar. The cultivars that produce better quantity than others are tissue culture plantlets of Robusta (AAA) and grand nain (AAA). They give yield to the maximum of 40 tonnes per acre.

The yields of other famous cultivates are:

1. Poovan (Mysore AAB), Rasthali (Silk AB), Neypoovan(AB) 20 tonnes

- 2. Robusta(AAA), Dwarf Cavendish (AAA)24 tonnes
- 3. Monthan(ABB) 16 tonnes
- 4. Tissue culture Grand Nain(AAA) 40 tonnes

PRECISION FARMING IN BANANAS: The most suitable cultivars for 'precision farming' are grand nain, Robusta, Nendran, Red banana and Rasthali. Tissue culture cultivars of banana can be cultivated throughout

the year. Planting of plantlets should be well thought out in advance, in such a way that there should not be heavy winds in the harvesting season. Hence the months of June and July are the most suitable for planting. NUMBER OF PLANTLETS PER ACRE:

1200 plantlets are required for one acre of land. The distance between each plantlet should be either 6ft x 6ft or 7ft x 5ft, as per requirement. Before planting, pits should be dug 1.5ft x 1.5ft x 1.5ft in size. Decomposed farm yard manure, compost and mother soil are mixed in 1:1:1 ratio. Along with this super phosphate 250 grams, neem oil cake 500 grams, Furadan (pesticide) 20 grams are mixed. This mixture should be applied into the pits while planting the plantlets. After planting 10 grams of bleaching powder dissolved in one liter of water is poured on the roots.

### **IRRIGATION:**

Plants need to be watered soon after planting. Next watering is required after 4 days. After that, garden land bananas should be watered every week and plants in the wet lands should be watered every ten to fifteen days. Drip irrigation is better suited than channel

#### irrigation.

According to research from Tamilnadu Agricultural University, 10 to 20 liters of water is required per plant if drip irrigated. Fertilizer Management:

Tissue cultured plantlets are cultivated under higher technical excellence. Fertigation and drip irrigation are mandatory from the 5th day of planting to the 300th day. Fruit bunches are harvested on the 300th day. N: P: K Recommendation: 200:35:300 grams / plant

All 100% Phosphorous is to be given as basal fertilizer application. For this 260 Kgs Super Phosphate is required per Acre that can be applied in the pit itself.

The entire Nitrogen and Potash should be given through Fertigation. For this fertilizers containing 254 Kgs Nitrogen and 381 Kgs Potassic are required per Acre

According to the research undertaken in

Coimbatore Horticultural College Robusta

yields will increase considerably with micro

nutrients application. Hence, 5 grams of

copper sulphate and 1 gram to borax are

dissolved in 1 liter of water and sprinkled on

**FERTIGATION SCHEDULE** 

S. No	Stages of Growth	Duration	Name of Water	Quantity of Water
			Soluble Fertilizer	Soluble Fertilizer
				(kilograms per acre)
01	From the day of	9 to 18	13-0-45	170
	planting to rooting	weeks	urea	120
02	Foliage growth stage	19 to 30	13-0-45	340
		weeks	Urea	180
03	<b>Flowering season</b>	31 to 42	0:0:50	150
		weeks	urea	110
04	<b>Bunch harvesting</b>	43to 45	0:0:50	150
	stage	weeks		
1	1	1		

Total requirement of Water Soluble Fertilizers per acre:

13:0:45 - 510 kgs 13:0:45 - 410 kgs

0:0:50 - 300 kgs

Bio fertilizers and micro nutrients:

4 packets of Azo spirillum, 4 packets of Phosphobacteria and 4 kgs of fresh cow dung are dissolved in 100 liters of water. 3 liters of this mixture is poured around the roots of each plantlet in the second and third month





### the leaves in the third and fifth month. After Cultivation:

Once in every two months earthing up of soil around the tree and adding the soil around the base will strengthen the tree. All new shoots and side suckers from the base are to be removed. All dry and diseased leaves are to be cut and burnt. This eradicates leaf spot disease. Once the last cluster of banana fingers has emerged, the male flower must be removed from the hanging bunch. When the full bunch emerges, the tree may fall down due to the weight. Bamboo or casurina props are provided to support the tree from falling. After the flower is removed the stem end is exposed. It may get infected by stalk end rot disease. Cover the peduncle with flag leaf to prevent main stalk end rot. Fingers may get damaged by exposure to sun. Hence, bunch is covered with dry leaves, to protect from direct sun rays. One strong side sucker from the base is kept untouched and preserved for the next ratoon crop.

# Growth hormones and growth regulators:

To prevent seed formation in Poovan cultivar and increase the size and quality of bunches in Poovan, Rasthali and Hill banana the following procedure is followed. After the last hand of banana fingers emerged, 25 milligram of 2,4D is mixed in 1 liter of water and sprayed on the entire bunch. 15 Grams of potassium sulphate is dissolved in one liter of water and sprinkled on the bunch, 3 to 4 times, to increase the size of the bunch. 40 liters of prepared potassium sulphate solution can be used for 500 bunches.

### Bunch Cover for Better Appearance:

Bunches are covered with perforated polythene bags to protect them from sun, dew, pests and sucking insects.

If all the procedures mentioned above are adhered to meticulously, much more than 40 tonnes can be harvested from tissue culture Grand Nain cultivar.



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Two kgs of castor seeds are pounded to pulp. This pulp is thoroughly mixed with 5 liters of water, and kept aside for 10 days for fermentation. Do not disturb the pot when the process of fermentation is going on. This fermented wash is a powerful biopesticide. 5 earthen pots of five liters capacity are kept at equal distance in the field. 2 liters of fermented wash is poured into each pot. Water is added to fill up the pots. A strong stench will emanate from each pot of the castor fermented wash due to powerful fermenting. This stench will attract many beetle and weevil pests.

These pots should be buried near the trees in the agricultural lands. The pests are attracted to the stench and fall flat in to the pot and die when they come into contact with the castor fermented wash. Once in two days dead pests are removed from the pot. Then the pots can be used again. The location of the pots can be changed according to our needs. Till the pest incidence is reduced these pot are kept. This bio – pesticide can be used up to 3 months.

Castor fermented wash can control large insects remarkably. Ash weevil, Red palm



weevil and Rhinoceros beetles are effectively controlled. Rats will not venture near the lands where castor fermented wash is kept due to the strong odour. According to the requirement, this wash can be kept in sugarcane, cotton and groundnut cultivated lands. Ash weevil is effectively controlled by this method. In the integrated pest management program this is an effective and economical plant protection measure cutting the cost by 20% . The cost of this operation is only Rs 250.

#### Attention Readers

Please note down your Pannai Cheithy Registration Number. Your registration number and serial number are printed on the envelop in the first line of the address column. If your mobile number and pin code number are found missing in the address column, please inform us immediately.



Mr. Sasikannan: "Agriculture is a profitable profession only if undertaken through right procedures. For any professional under taking, concentrated effort for 8 to 10 hours in a day is required. Take yourself for instance. When you go to work, you come back in the evening only. Is it not? You work for 8 to 10 hours tirelessly and then only you get your salary. Am I right? This case is true in the profession of agriculture too. If a farmer spends his time in a teashop or under a tree during daytime, will his agricultural profession prosper? Certainly not. An agriculturist must put in at least eight hours of concentrated work effort into his land, with attention to details, and dedication. I have 7½ acres of land. My mother, wife and I, all work tirelessly in our field."

"Now I have planted Brijwal Tube rose in my land. Since Brijwal is a hybrid cultivar, the leaves are broader and tubers larger. Flowers are white and pinkish in colour. Brijwal Tube rose fetch higher market rate than local varieties. At present, Brijwal Tube rose are marketed at a rate of Rs 60 per kg. During 2014 the rate for the flowers was at a peak Rs 550 per Kg. During festival and wedding seasons we get Rs 250 to 300 per Kg. On an

#### Farm visit:

Mr. Srinivasan, Assistant Director of Horticulture and Mr. Sengalvarayan, Dy. Horticulture Officer, Reddiyar chathiram discusses with farmer Mr. R. Sasikannan, Ottakoilpatti, Dindigul district.

# average I can earn Rs 21, 000 from 3/4 acre of land"

Mr. Srinivasan: We have given drip irrigation on subsidy to Sasikannan's land. Through the horticultural department the drip system was offered with a subsidy of 75%. Under our advice and supervision, mulching sheet technology is also adopted for his Tube rose crop. He is the first person to do so in his area. The special benefits got through mulching technique are as follows:

1. Drip irrigated water does not evaporate fast.

2. Fertigated fertilizers do not evaporate.

3. A special climatic condition is created under the mulch that enhances root growth and density.

4. As evaporation is prevented by mulching, salinity level is kept under control



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in the root zone. If salinity level increases in the root zone the flower crown will droop down. So for farmers having high salinity level in the irrigated water mulching is very helpful.

5. Prevents weeds. Weed removing expenses come down.

- 6. Pest attacks and diseases decrease
- 7. Yield of Tube rose improves

Mr. Sengalvarayan: "I am doing extension work among farmers and explain about the Government's subsidy schemes. I am moving with the farmers for the past 33 years. If the farmers keep all their land documents like land deed, pata, chitta etc, recommending the farmers' cases for subsidy will be easier. Normally farmers do not care much about their documents. If farmers submit proper



documents along with photographs of their lands we can easily recommend and get subsidies to them"

Mr. Sasikannan: "We are grateful to the authorities of the horticultural department. We are able to execute 'mulching sheet technology and 'drip irrigation system' through the great help rendered by them"

### Subscription for Pannai Cheithi

### Dear Pannai Cheithy readers,

Most of you have informed us that Pannai Cheithy is a very useful agricultural magazine and it does great service towards increase in profits. We feel happy about it. Now this magazine is published once in every two months. We have been receiving requests from subscribers to publish Pannai Cheithy as a monthly magazine. Ground work towards that goal is already in progress.

Until now, Pannai Cheithy was sent free of cost to farmers. Your cooperation is solicited to continue this mission successfully.

Now we have introduced Rs 100/- as annual subscription charges for Pannai Cheithy. Kindly help us to serve you better and consistently, by sending in your subscription amount. Please don't forget to mention your Registration number, address and mobile number on the money order form.



1. I bought seeds of PKM1 moringa seeds from a reputed dealer only. When it started bearing, more than half of the pods were disappointingly short. Why?

#### S.V.Kamaraj, Sathyamangalam

When PKM 1 seed production is done no other varieties of moringa especially local varieties should be nearer. The pollens from other cultivars contaminate PKM1 flowers and the genetic purity is compromised. This is the reason farmers are not able to get the original PKM 1 seeds. It is difficult to get original PKM 1 seeds nowadays. To overcome this problem let me suggest the following method.

PKM1 is widely cultivated in Ariyalur and Andipatti. Go to these areas and inspect the fields where original PKM 1 moringa is cultivated. The original trees can be identified by length of pods which will be two feet in length. Choose 2 or 3 such trees. Talk to the farmer and buy the trees fully. Cut the trees into pieces and transport it back to your land without leaving even pencil sized sticks. Cut the sticks at 6 inch length and branches to 1 foot length. Buy polythene pouches of various sizes to accommodate different sized sticks. Make a couple of holes at the bottom for water drainage. Mix coconut fiber pith and vermicompost in equal proportion and fill the bags with the mixture. The sticks and branches are carefully and correctly planted in the bags in such a way that the growing part faces upwards. Keep them under shade net nursery. Watering is done through sprinkling. When the new shoots are one foot in length, planting in the field is done. There is no other way to get 100% pure PKM1 moringa trees than this method.

### 2. Is this the right season to sow maize? What is the seed rate required?

Alagar, Palangulam, Virudunagar

Hybrid maize can be cultivated in all seasons if enough water is available. Particularly July - August season (Aadi Pattam in Tamil) is most suitable to begin cultivation. The duration of the crop is 110 days for Co.6, a hybrid crop from Tamil Nadu Agricultural University. Under irrigation, the yield will be 2500 kgs per acre. 10 kgs of seeds are required for one acre of land. Private seed producing companies like Syngenta and Pioneer are also producing excellent hybrid seeds. Syngenta NK 6240 is prevalently cultivated by many farmers. Pioneer P3540 is suitable for rain fed condition and Pioneer P4546 is recommended for irrigated cultivation. Pioneer P3396 gives more yields.

# 3. What variety of cucumber should a cultivate? Where will I get the seeds?

#### Suman, Sengam, Thiruvannamalai

Summer seasons are the best for cultivating cucumber. There are 2 varieties in cucumber. What the sellers are selling in the bus stops during summer are the local varieties. The local variety is a vine that spreads on the ground. The fruits can be harvested 45 days after sowing. Sow the seeds in such a way that the harvest comes in the summer months like April, May or June.

The second variety is called salad variety. This variety is very good for raw consumption taken with food as salad. These vines need trellises and lattices with widely spaced ribs. If they are cultivated under Green house condition very good income can be received. Hybrid cultivars from companies like Bejo and Sungrow can give good yield and better tonnage, resulting in more profits.



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Application Methods: Can be applied to all crops. Particularly this fertilizer is beneficial to vegetables, fruit corps and hill plantations. This is available in 25 kg bags. 2 to 4 bags per acre can be applied as basal fertilizer and top dressing.

#### **Benefits**:

- Reduces salinity and alkalinity in soil
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- Increases water retention capacity of the soil.
- Marco and micro nutrients are made available to the plants
- Encourages bacterial growth and increases soil fertility.
- Hard soil is made porous improving aeration and water percolation.
- Helps the plants to resist pests and disease.
- Helps to get good yield and quality produce and improves storage for
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30



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