



Perception About Chemical Application in Mango Orchard in Muthalamada Panchayath

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ABSTRACT

Mango (Mangifera indica L.) universally considered to be one of the finest fruits, and is an important crop in tropical and subtropical areas of the world. Muthalamada panchayath is known as the mango city in Palakkad district Kerala state. Pesticides victims in Muthalamada increase day to day. Lease farming is practicing almost everywhere in Muthalamada.

More profit with short period of time is the main attraction of mango farming. Among the known diseases of mango, mango malformation is the most serious disease. This review summarizes the perception of mango traders about application of high dosage of pesticides in mango orchards and the perception of lease and land owners about the mango cultivation.

KEYWORDS : mango traders, leases and high dosage chemicals

Introduction

India is an agriculture based country. The diverse agro-climatic zones the country makes it possible to grow almost all varieties of fresh fruits and vegetables in India. There has been a steep rise in the number of fruit exporters. The total production of fruits and vegetables in the world is around 370 MT. India ranks first in the world with an annual output of 32 MT. Amongst fruits, the country ranks first in production of Mangoes. Mango and mango-based products constitute 50% of exports. The vast production base offers India tremendous opportunities for export. The fruit production in India has recorded a growth rate of 3.9%. During 2015-16, India exported fruits worth Rs. 3,524.50 crores. The major destinations for Indian fruits and vegetables are UAE, Bangladesh, Malaysia, Netherlands, Sri Lanka, Nepal, UK, Saudi Arabia, Pakistan and Qatar. (Source: Italian trade promotion agency- 2011 and nhb.gov.in)

Kerala state is located in the Southern part of India. Mango is not considered as a commercial crop of Kerala, but mango trees are inevitable components of homesteads of the state. The total estimated area under mango cultivation is 75,911 hectares with an annual production of 32,3517 tonnes. Commercial orchards of mango are being established in the Palakkad district, where the climatic conditions are more suitable for mango trees. The cultivated varieties include Sindooram, Kilimooku, Nadusela moovandan Alphonso, Banganapally, Neelum, Kalapady, Guddadat and Prior. The main feature of Kerala mango production is the earliness. The first mango fruits of the season come to the Indian markets from Kerala. The flowering commences by November-December and the harvesting starts by March-April, which helps to fetch the maximum price for the fruits to the growers due to the high demand for the fruits in the main markets in the other parts of the country. The details collected during the survey included the nature and type of mango orchards and the cultivation practices followed by the growers in Palakkad, Kerala. (Ramachandran Nair, S.Radha, T - Status of mango cultivation in Kerala - 1999)

Muthalamada is the biggest centre of mango production in the country and the fruit varieties are the first to reach global markets much before the mangoes mature in the gardens of the competitors, chiefly Peru and Venezuela. Mango orchards spread in 4500 hectares of land in this grama panchayat sharing borders with Tamil Nadu. Mango export alone is worth Rs.200 crore a season in this otherwise sleepy region of Palakkad. "Exporters have already started flocking to this village. Among the mango hubs in the country, harvesting begins in Muthalamada first, by February end every year, and the season continues till the end of July," Mohan Kumar, general secretary of Muthalamada Mango Merchants Association, says. (The Hindu daily - Muthalamada filled with scent of mangoes March 2015 and APEDA)

Pesticides application in Muthalamada

The role of pesticides has become critically important with modernization of agriculture. Non-optimal and non-judicious use of pesticides may result in a series of problems related to both loss of their effectiveness in the long run and certain externalities like pollution and health hazards. It is argued that increase in production cost, when associated health costs are counted due to use of pesticides, exceeds the improvement in crop productivity. Muthalamada is called as the mango city.

But of late, Muthalamada grama panchayath has gained notoriety for excessive use of endosulfan in its mango orchards. Its effect is showing on people living there. This study mainly concentrates the perception of mango growers in Muthalamada, using high dosage of pesticides.

Literature review:

Sabur and Akter (1997) in the study "pesticides use in Indian agriculture in relation to growth in area and production and technological change" showed that total as well as per hectare use of all types of pesticides were found to increase since 1982/83, but this upward growth had been checked in the recent past of Bangladesh. Their study result showed that pesticides influenced value of production positively up to certain level, after that they affected negatively.

Gandhi and Patel (1997) in the study entitled "pesticides and the environment: A comparative study of farmer Awareness and Behaviour in Andhra Pradesh, Punjab and Gujarat", found that farmer perception of the significant impact of pesticides on the environment seemed to exist but was limited to their immediate surroundings of labour, other human beings and animal. It did not go beyond this to the effect on water, air and residues in the produce. Further their awareness about environment friendly alternative such as biological control, integrated pest management and homemade formulations was almost nil. On the other hand, awareness about pesticides was about 100 per cent and used by 90 per cent farmers. It was found that pesticides use levels were determined significantly by the extent of irrigation, presence of cotton and wheat, and location. The intensity of use was higher on small farms. Education and age of the farmers seemed to affect pesticide use negatively

Objectives of the study

To observe the usage of pesticides in mango orchard by both lease farmers and own orchard farmers in Muthalamada.

Methodology

Both primary and secondary data is used in this study. With the help of agriculture office in Muthalamada panchayath and mango farmer's association 50 mango farmers were selected randomly for the study. Structured Questionnaire is used for collecting data. Demographic characteristics, farming practices and perception of the farmers were taken in this study.

Muthalamada is the main center of mango cultivation in Palakkad district, makes the area chosen for this study. The survey was conducted from January to May 2014.

Findings

Socio economic profile

The main intention of this study is to observe the influence of demographic characters in the study. The demographic characteristics show that 70 percent of the mango farmers are in the age group between 25 and 50 years. All samples are male, more than one half of the farmers have education qualification of below SSLC. All the farmers are residing in rural area, with joint family type. 90 percent of the mango

farmers have above 5 members in their family. All the selected mango farmers are financially well with an annual income of more than 10 lakhs. The mode of practicing farming is both organic and non organic in nature. Cow dung is the only organic inputs they used, after the first shower of rain. All other fertilizers like N, P, K and pesticides (for plant growth regulator, fungicides, hormones etc.) are non organic in nature. Fertilizers and chemicals are procured from both inside and outside Kerala, Muthalamada panchayath situates, board of Tamilnadu state. Low price, ample variety, proper recommendation according to the disease and need, makes the farmer depend Tamilnadu for their purchase of fertilizers and pesticides. Mainly lease system is commonly seen in Muthalamada Mango orchard. More than one half of the mango farmers lease amount per tree is between Rs. 1000 and Rs. 1500. The lease amount fixed on the basis of certain conditions like number of trees available in the orchard, its variety, water availability and transportation facilities is taken in to consideration. 20 percent of the farmers farm land situated, with a distance of above 5 km. 40 percent of the farmers farm land situates less than One Km distance and rest of the 40 percent farmers have distance between 1 and 5 Km. Nearly one half of the farmers have more than 10 years of experience in the field of mango cultivation (mango growers and traders) The entire farmer depend both family and outside source for their manual labour.

Table 1.1 socio economic profile of the mango growers

Age	Number	Percentage
Below 25	10	20
25 – 50	35	70
Above 50	5	10
Gender		
Male	50	100
Education		
Illiterate	5	10
Below SSLC	26	52
UG	15	30
Others	4	8
Primary occupation		
Both mango traders and growers	50	100
Area of Mango Orchard		
Rural	50	100
Type of family		
Joint	50	100
Family size		
Below 5 members	5	10
Above 5 member	45	90
Income		
Above 10 lakh	50	100
Farming practices		
Both organic and non organic	50	100
Ownership of land		
Both own and lease land	50	100
Distance between residence and farm		
Less than 1 Km	20	40
1 – 5 km	20	40
Above 5 km	10	20
Experience in mango cultivation		
Inheritance	10	
Below 5year	16	
5 – 10 years	20	
Above 10 years	24	
Employees availability		
Both hired and family	50	100
Procurement of fertilizers and pesticides		
Both inside and outside kerala	50	100
Assistance from government / authorized authorities/ departments		
No	50	100
Lease structure		
Lease amount / tree		
1000 – 1500	28	
1500 -2000	12	
Above 2000	10	

Lease condition		
Number of trees	50	
Water availability	50	
Transportation	50	
Variety of trees	50	

The perception of mango growers about chemical application in the mango orchards are detailed here. All the sample respondents are agreeing that, they apply high dosage of chemicals for more yield, short market time, shelf life and demand, high lease rent, same practice followed by the neighboring farmers. Mango farming is a seasonal business; farmers make profit only within this period.

Table: 1.2 Perception of mango growers on chemical application (Usage of high dosage of non-organic inputs)

Perception factor	Agree	Disagree
More yield	50	Nil
Follow neighbour farm practices	50	Nil
Primary occupation (no work in the off season)	50	Nil
Short market	50	Nil
Low shelf life	50	Nil
Short demand	50	Nil
High lease rate	50	Nil
Necessity to earn profit with limited time	50	Nil

Mango farmers are well aware about the evil effects of chemical application in the mango orchard like soil, water and air pollution, physical obstacle to the labours and neighbors, pest resurgence and environmental imbalance.

Table: 1.3 Awareness about the evil effects of chemical application in the mango orchard

Awareness	Agree
Soil erosion	50
Neighbour and labour	50
Water	50
Pest resurgence	50
Environmental imbalance	50

Mango farmers who are agree to reduce the usage of high dosage chemicals in the mango orchards only when the suggested steps are taken into consideration, like guaranteed yield, proper recommendation to disease and pest management and more marketing venues and storage facilities.

Table: 1.4 Suggestions put forward by the mango growers, to reduce usage of chemicals

	Agree	Disagree
Do u agree to apply chemicals recommended by government authorities / university	50	Nil
Guaranteed yield	50	Nil
Proper guidance and training	50	Nil
More marketing venues	50	Nil

Table: 1.5 Expenses incurred per mango tree

Sl no	Items	Lease farmers cost	items	Own farm-ers cost
1	Fertilizers (Urea and other chemical fertilisers)	100	Organic manures	65
2	Pesticides (5 times spray)	400	Very low dosage pesticides (Average cost)	75

3	Hormones – for flowering and fruit)	150	No hormones used	-
4	Total cost including all other expenses (land preparation – marketing cost) (round off)	5500		4500

The cost of cultivation incurred by the mango farmers per mango tree is Rs. 4500

Results and discussions

Muthalamada panchayath is under the hands of pesticides victims. Many print and visual media reported it time by time. Government and other officials are in a confused position to solve this problem.

High profit and more economic flow

Cost of cultivation of mango farming, on an average of Rs. 5500. The average yield per mango tree is 200 kg and average price per kg is Rs. 55. Average profit per tree is Rs. 5000.

Highlights

- Climate and soil condition are favorable for mango cultivation.
- Sufficient rain and ground water availability in Muthalamada.
- The nearest commercial trading center is Tamilnadu
- An average profit of Rs 6000 per tree
- High profit earning with in a small duration of time, it's a sea-sonal crop.

Constraints

- Lack of training and development among the mango farmers about mango cultivation
- No proper research and development in pest management, yield and growth.
- No storage facilities for mango
- No value added product development organizations
- Shorter period of market
- Mango cultivation is a seasonal business, farmers get idle at the time of off season and the earning time is too small.

Yield/ technical constrains

- Lack of knowledge in application of chemicals
- Lack of constraints in quality and quantity assurance of chemi-cals used per mango trees
- No proper recommendation / prescription of chemicals used for mango trees according to their needs.

Conclusion

Muthalamada panchayath is now known as mango city. This make the mango orchard in Muthalamada has high land rate. Due to this majority of the farmers who took mango orchards for lease and it's a common sight throughout the panchayath. As the favorable climatic condition competition for Muthalamada mango is very low. Mango growers took mango orchards for lease for yearly basis and to nurture the trees and earn income. Due to low competition, limited time span for market, mango traders apply high dosage of chemicals in the mango orchard. Majority of peoples in Muthalamada panchayath are mango traders who took mango orchard for lease. And the real land owners who move behind some other professionals (government and non government) they have no time to spend in the mango orchard or they are not inter-ested in mango farming duet o some prestigious issues.

The traders who invest more in lease farming because no tension about the property and may withdraw when the situation is bad. (Lease only for one year). No intimacy towards the orchards because its lease land. Squeeze maximum yield (profit) within this minimum time.

They are aware about the evil effects of pesticides. But there is no other subsidiary option. If the government, agricultural officer and other official took necessary steps by formulate new organic fertilizers and bio pesticides which gives similar yield like non organic chemi-cals. Timely ban the usage of high dosage of pesticides training to both mango traders and mango farm owners about the effects can control up to a certain limit or Muthalamada the mango city turn to pesticides city.

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