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Onattukara Sesame – Success Story from Declinal to Revival

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ABSTRACT

Onattukara region of Kerala is famous for sesame cultivation and the varieties released from Kerala Agricultural University received GI tag. Sesame is grown as third crop in Onattukara after the harvest of rice. Sesame grown in this area is unique due to its medicinal properties. But due to low yield and lack of scientific knowledge about cultivation farmers were reluctant to take up sesame as third crop in the rice fields of Kerala. Onattukara Regional Agricultural Research Station of Kerala Agricultural University along with Department of Agriculture and registered farmers agency-Onattukara Vikasana Agency took extensive efforts in this area so as to revive sesame cultivation. After continuous trainings and field visits farmers raised the crop and on an average they got an additional income of 40,000/hectare. Area expansion is going on and in the next season it is expected to cover an area of 1000 hectare under sesame cultivation.

INTRODUCTION

Onattukara region of Kerala is predominantly a sandy tract, which is very well suited for sesame cultivation. Onattukara region includes 4 municipalities and 41 panchayats spread out through the districts of Kollam, Alappuzha and Pathanamthitta of Kerala state. In Onattukara, sesame is cultivated as the third crop after the harvest of rice. Farmers generally grow sesame utilizing the residual moisture available in rice fields. The area experiences a moderate climate, mean minimum temperature ranging from 22.0 °C to 25.2 °C and mean max. temperature ranging from 29.0 °C to 32.9 °C . The relative humidity ranges between 70.0 to 81%. The annual rainfall in Onattukara region is 2600mm. Sesame grown in this region is unique for the quality of seeds and oil. Even though the crop has been cultivated since time immemorial, farmers were using local cultivars and they were reluctant to adopt high yielding varieties released from Kerala Agricultural University. The varieties released from Kerala Agricultural University viz. Kayamkulam 1, Thilak, Thilathara and Thilarani along with local cultivar Ayali received GI tag and further interventions made by Onattukara Regional Agricultural Research Station, Kayamkulam of Kerala Agricultural University along with Department of Agriculture and registered farmer group, Onattukara Vikasana Agency convinced farmers regarding use of improved varieties as well as scientific cultivation of Sesame which helped farmers to earn additional income.

Situation analysis

Farmers were not practising scientific cultivation and was thinking of keeping the land fallow in the third season. In Onattukara region sesame is grown mainly in two seasons making use of available soil moisture. The upland cultivation is carried out from August- September to December-January and in the low lands it is practiced during January- April. All the varieties released from Kerala Agricultural University is suited for both upland and lowland cultivation as well as high yielding(500-600 kg/ha). But due to unscientific cultivation farmers were getting only very low yield and moreover they were forced to sell the seeds for low prices. Proper marketing facility was lacking and the farmers were facing severe loss due to these factors. Sesame oil and sesame candy were the only by products made from the seeds and hence value addition was a field to explore more for getting good value products. Hence the extension functionaries felt that there is

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Measures on to expand cultivation of GI-tagged Onattukara sesame

Onattukara Vikasana Agency, registered owner of the GI-tagged sesame seeds, plans to increase the area under sesame cultivation to 2,000 hectares from the current 600 hectares; the oilseed is said to have medicinal value

The Hindu Bureau

Efforts are being made to expand the cultivation of geographical indication (GI)-tagged Onattukara sesame. Authorities have announced an incentive scheme for growing sesame on fields and homesteads in the Thekkekara Krishi Bhavan limits. Mavelikara Thekkekara grama panchayat president K. Mohankumar said that financial assistance of ₹40 for a cent of land would be given to farmers for cultivating sesame.

The project, which was launched recently, is a joint venture involving the local Krishi Bhavan, Onattukara Vikasana Agency (Onattukara Region Agricultural Research Station (ORARS), Krishi Vigyan Kendra, Kayamkulam, Mavelikara Thekkekara panchayat.

Mr. Mohankumar said that the seeds would be distributed from Thekkekara Krishi Bhavan and the sesame produced under the scheme would be procured by the OVA paying the market price. "We aim to increase the area under sesame cultivation. Individuals, farming collectives, Kudumbashree groups, self-help groups, and joint liability groups will be given incentives for conducting sesame cultivation," said the panchayat president.

He said that farmers and groups could utilise the workforce of Thekkekara Karshika Karma Sena and a tractor in its possession for preparing fields and other activities. The Karma Sena is charging ₹750 per hour for renting the tractor.

Onattukara sesame is currently grown on around 600 hectares spread across 43 local bodies in three districts of Alappuzha, Kollam and Pathanamthitta.

The OVA, the registered owner of the GI-tagged sesame with Agriculture Minister P. Prasad as its chairman, plans to increase the area under sesame cultivation in the region to 2,000 hectares.

Medicinal value

An analysis by Kerala Agricultural University revealed that the oilseeds have added medicinal value. Compared to other places, sesame grown in the region contains high levels of Vitamin E and antioxidants.

It also contains oleic acid, linoleic acid, palmitoleic acid and so on which help maintain good health. Besides the traditional Ayali variety, farmers in the region are cultivating Kayamkulam-1, Thilak, Thilathara and Thilarani varieties- all developed by the

an immediate need to intervene in the cultivation of this traditional oil seed crop.

Plan, implementation and support

The status of GI tag was well utilized by the research station along with agriculture department so as to promote farmers for practising scientific cultivation of Sesame. The varieties released from Kerala Agricultural University is rich in many biochemical components (Table 1.) Scientific cultivation was initially promoted with the demonstration of cultivation through participatory seed production programme in the selected farmers field under the monitoring of the scientists of research station. Extensive sessions on scientific cultivation were conducted at 7 different blocks of Onattukara region comprising of 45 Krishi bhavans (Agricultural extension and facilitation centre in each panchayath) consisting of more than 600 representative farmers during 2023-24. Trainings were provided well in advance of planting season. From the research station 1710 kg seeds of university released varieties were supplied to farmers free of cost covering an area of 427.5 ha in addition to cultivated area of 225 ha using local varieties. Moreover Department of agriculture provided a subsidy for cultivation at the rate of Rs.10000/ ha.

Selected women group were trained on sesame value addition and diversified products like sesame candy, sesame pickle, sesame-coconut chutney powder, Sesame halwa etc were demonstrated. Meantime Department of Agriculture along with registered farmer group took initiative to form Farmer Producer Organizations (FPOs) and trainings were provided on various aspects starting from cultivation to marketing.

Output

Sesame cultivation regained its full potential and through the trainings farmers were made aware of scientific cultivation practices. Through field visits and through social media groups farmers interacted with scientists and timely information were passed regarding cultivation and pest and disease management. Through scientific cultivation the crop gained its potential yield and farmers got additional income through this third season crop. Farmers got reasonable price for seeds. Previously it was Rs.200 per kg and now it increased to Rs.400 per kg. The sesame oil fetched an amount of Rs.800/kg and now farmers are getting the benefit of Rs.40000 to Rs.45000/ ha through sesame cultivation. The cropping area increased and now

Table 1. Biochemical parameters of Onattukara Sesame

Sr.No	Biochemical Parameters	Onattukara sesame
1.	Antioxidant (Absorbance)	0.207 - 0.294
2.	EC 50	83.00 -144.00
3.	Oil content (%)	43.26 - 48.42
4.	PUFA	37.35-39.97
5.	Oleic acid (%)	42.44-45.29
6.	Linoleic acid (%)	37.06-39.74
7.	Palmitic acid (%)	8.81-9.32
8.	Palmitoleic acid (%)	0.07-0.11
9.	Linolenic acid (%)	0.23-0.30
10.	Vitamin E (mg/100g)	3.81-7.92

Supply of sesame seeds and Area expansion activity of Sesame

Value addition of sesame seeds

production also increased through timely intervention and women entrepreneurs are now willing to take up sesame value addition as a small-scale enterprise. Farmers could either sell their seeds directly or facilities were provided for procuring the seeds by research station or registered farmer group.

Impact

With the timely intervention of Kerala Agricultural University, Department of Agriculture and Onattukara Vikasana Agency , farmers were routed to take up scientific cultivation of high yielding varieties of Sesame as a summer crop after the harvest of paddy so as to get additional income. As a result farmers started

GI logo of Onattukara Sesame

cultivation thereby intensifying the existing area and there by encouraging other farmers also to participate in the activity. Now the demand for seeds increased and it is planned to cover an area of 1000 ha in Onattukara region in the coming cropping season and also the same is now getting expanded to north Kerala also. Onattukara sesame oil is having high medicinal properties and hence traditional Ayurveda practitioners as well as companies prefer this oil for making *Ayurvedic* preparations. Farmers groups can make use of the GI logo and the registered farmers will be much more benefitted by selling the products. Government has already sanctioned a processing unit and quality assurance lab for scaling up the production and marketing of value added products from GI tagged sesame varieties which can make a remarkable change in the income of sesame growing farmers and can be benefitted from both national and international markets.