

Groundnut oil extraction entrepreneurship:

A gateway to farmers' economic sustainability

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Oilseeds are major crops in dry lands of Andhra Pradesh, India. The oilseeds include groundnut, coconut, sesame and sunflower. In India, value addition is in its primordial stage due to lack of knowledge among farmers. This requires imparting skills to the farmers regarding value addition, marketing and branding for converting them into successful entrepreneurs. As a part of this, Acharya N G Ranga Agricultural University thought of increasing the income of the farmers so as to make them economically sustainable. Accordingly training on establishment and running of cold pressed oil extraction units (oil mills) was established. Two units were established at Kurnool and Anantapur districts where a single unit on an average is generating a net income of ₹31,475 per month. With the advent of this intervention, the farmers are getting additional income and thus many farmers are utilizing the opportunity.

Keywords: Biotech KISAN hub, Entrepreneurs, Oil extraction unit, Oilseeds, Value addition

INDIA is traditionally facing deficit in edible oils with a wide gap between supply and demand. Groundnut is the major oilseed crop cultivated during rainy (*kharif*) season and winter (*rabi*) season seasons in Anantapur district followed by Kurnool district from Rayalaseema region. Despite the huge area under cultivation in these districts, the farmers are not getting benefitted due poor marketing like inadequate procurement, storage and processing infrastructure by the government agencies in Andhra Pradesh. These oilseeds are being cultivated by marginal and small farmers group under rainfed conditions. As a result the production is fluctuating every year. To overcome the exploitation by uncertain market prices, value addition paves the way to increase the income of the farmers and maintain sustainable income in long run as the value added products are in great demand these days. Value addition at farmers' level will be an added advantage as it promotes entrepreneurship with production and marketing of good quality oils

at ground level.

Farmers sell their whole produce of groundnut, coconut, sesame and sunflower in market and purchase the processed oil from retail shops because they don't have a facility to process their produce as part of on farm processing. On the other hand, for processing purpose they have to move to faraway places which adds transportation and high processing cost. Hence, they have no option left but to sell the whole produce in market even at low costs. Moreover, the quality of oil available in retail shops is poor which affects the health and nutritional status of the common people including the farmer families. Being the actual producers of the oilseeds, these farmers are not able to avail good quality processed oil.

Intervention for promotion of entrepreneurs

In order to avoid this problem of high processing costs and poor quality oil and also to develop entrepreneurship for sustainable income generation among the farmers, Department of

Biotechnology in collaboration with Acharya N G Ranga Agricultural university has taken up an initiative to establish cold pressed oil extraction unit as a part of Biotech KISAN hub project funded by Department of Biotechnology, Ministry of Science and Technology. Two units were established in total with one unit each in Kurnool and Anantapur districts, respectively. These units were run by farmers' groups of the respective districts forming mutually aided cooperative societies (MACS). These units include Sri Neelakanteswara Organic Farmers Mutually Aided Cooperative Society, Yemmiganur, Kurnool district and Pallavi Mahila Sangham, Kalyandurg, Anantapur district.

These societies form FPO (Food Processing Organization), where they take up multiple activities like attending to the sales of organic produce and organic certification. In addition to these, they were also strengthened with establishment and running of oil extraction units through DBT project team. These units are currently being run in



Establishment of oil extraction unit at Kurnool



Oil sold in local super markets

(public private partnership) PPP mode in the villages under supervision and technical assistance of concerned DAATTC in Kurnool district and KVK in Anantapur district. They are established and designated in a well identified place with display boards depicting the name of the University, Project and Extension institute (DAATTC/KVK). Demo classes and trainings were given to the groups who are involved in running the unit. The products are sold with the brand name of the society and concerned DAATTC/KVK. The farmers have been successfully running these units and individuals from nearby mandals are utilizing the facility.

Outcome of intervention

The rates on oil sales have been fixed reasonably according to the expenses incurred in crushing the raw produce (Table 1). These oils have received FSSAI certification as well and are sold directly in retail shops and supermarkets. In addition to this, the oil is also marketed through farmer groups using social media and other IT modes so that it

has wider reach.

Success story

A group of farmers from Yemmiganur village engaged in agriculture, experienced risk due to unpredictable climate, increased input cost and fluctuating market prices. They formed a farmer producer organization registered under cooperative act as "Grama Vikas Farmers Producers Mutually Aided Cooperative Society Limited" and opened a retail outlet at Yemmiganur, initiated sales of seed, tarpaulins and also obtained seed and pesticide license from the Department of Agriculture to do input business. One of the farmers from FPO, Mr. Prabhaiah who grows and sells groundnut in open market, approached Krishi Vigyan Kendra, Banavasi in Kurnool district for suggestion to improve groundnut production and also to make his farm profitable since he realized only marginal profits during previous years. As per KVK suggestion, he underwent the training programme on value addition to oilseeds conducted



Oil can: 5 litre capacity

under Biotech KISAN Hub project during 2020. During the course of training, he developed interest on value addition of oilseeds especially oil extraction through cold pressing units, since he had knowledge on the status of edible refined oil in the market. His interest had made him to further know about the harm caused by the edible refined oils available in the market and he also studied the market demand for cold pressed pure edible oils.

Having seen his interest, the KVK supplied cold pressed oil mill along with filter unit to the society and trained him on oil extraction for groundnut, sesame, coconut, safflower etc. and formed market

Table 1. Economics of processing unit

Produce (100 kg)	Returns from oil and by product (₹)	Cost involved including produce, power consumption and labour charges (₹)	Net profit (₹)
Groundnut	15,500.00	8,600.00	6,900.00
Coconut	25,000.00	13,600.00	11,400.00
Sesame	19,800.00	12,600.00	7,200.00
Sunflower	14,575.00	8,600.00	5,975.00
Total	74,875.00	43,400.00	31,47.00



Supply and establishment of cold pressed oil mill along with filter unit by DBT team with Mr. Prabhaiah from FPO

network by creating awareness to general public. Further, he invested an amount of ₹50,000 for bottling and packing with labels and also for publicity. He got good demand for the oil and sold oil @ ₹30 per litre which earned him ₹30000 per month. Within a short period of time, he reached a turnover of ₹6.8 lakhs per annum while providing employment to 2 members with net income of ₹30000 per month. He expressed his gratitude and emphasized on being highly satisfied for engaging in the FPO and progressing through this business.

SUMMARY

An initiative was made to train the

farmers on value addition through a pilot project on establishment of oil extraction unit at village level in adopted districts under DBT-Biotech KISAN Hub project at Acharya N G Ranga Agricultural University, Andhra Pradesh. Establishment of such units increases the farmers' income by making them financially self-sufficient and economically stable in the situations of market uncertainties. These units further promote good quality oils for consumption with high nutritional benefits. These units also prevent the exploitation of farmers by middlemen and allow them to enjoy the benefits. These units help in building employment skills among

farmers to become successful entrepreneurs. Many new farmers are showing interest in starting oil mills encouraged by the successful outcome. The KVKs and the DAATTCs are initiating measures to assist those farmers in facilitating the technology and have also initiated efforts to include the same in State Agriculture Department subsidy programme.

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Pusa Decomposer— A microbial consortium for *in situ* paddy straw management

Pusa Decomposer is a microbial consortium of fungi developed by IARI for accelerated degradation of paddy straw into manure in 20–25 days. This technology is an effective eco-friendly solution for agri-residue management and an alternative to burning, thereby decreasing air pollution and improving soil health. A standard operating protocol (SOP) has also been developed for *in situ* management of agri-residue. The protocol involves application of the Pusa Decomposer spray, followed by rotavator for proper mixing of the spray with the straw and light irrigation to ensure moisture in the field. During 2020, Pusa Decomposer was demonstrated in an area of about 13,420 ha in different states of the country including Delhi. In 2021, the Pusa Decomposer shall be applied to > 15 lakh acres in the four states of Punjab, Haryana, Uttar Pradesh and Delhi.



Pusa Decomposer



Spraying



Mixing and incorporation



Irrigation



Germination of wheat

Source : ICAR Annual Report 2021-22