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The Use of Oil Palm Frond for Beef Cattle Feed of Cattle Farming Community Enterprise in Sichon District, Nakhon Si Thammarat Province

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Abstract

Promoting the use of oil palm frond for beef cattle raising of 3 community enterprise groups in Sichon District, Nakhon Si Thammarat Province was conducted in these groups: 1) Thung Sai beef cattle community enterprise group 2) Thung Prang beef cattle community saving group and 3) Sao Phao beef cattle community group. The total number of members of all 3 groups were 90 people. The objectives were to solve problems of lack of cattle feed and to determine the guideline for raising cows in combination with oil palm plantations. There were 6 steps of the change process: 1) Organizing a workshop on using oil palm frond for cattle feed, 2) Farmer group development by establishing a learning center for raising beef cattle, 3) Formulating a 2-year group action plan, 4) Procurement and support of animal feed mixing equipment, 5) Helping farmers facing beef cattle feed problems, 6) Monitoring and following up with the members. From the 3-year implementation (2016-2018), the use of oil palm frond for feeding increased the oil palm frond value of 6,000 baht per rai per year. The saving from using oil palm frond was 600 baht per day on each farm. All three sub-districts successfully established a learning center on the utilization of oil palm frond in beef cattle raising. This operation has led the farmers to have higher income, to reduce animal feeding costs by 35% and to gain higher profits by 26% from the sale of cattle during the fattening period of 6 months, in comparison with situation before the operation. In conclusion, the farmers received more tools and equipment from government agencies and achieved success in various projects, namely, winning the first prize in the Cattle-Buffer Bank Project for farmers under the Royal Initiative Outstanding level 1, Office of Livestock Development, Region 8, for two consecutive years.

Keywords: Nakhon Si Thammarat province, Sichon district, Oil palm frond, Beef cattle feed, Agricultural waste



Organic Glutinous Rice Seed Development: Dao Laum Deuan Organic Rice Seed Community Enterprise, Sakon Nakhon Province

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Abstract

Dao Laum Deuan Organic Rice Seed Community Enterprise was set up in 2017 with an aim to produce glutinous rice seeds for community use; however, the seeds had not obtained a certification of rice seed standard. Under the policy to promote organic rice production, the farmers want to develop the potential of glutinous rice seed production to meet the certified organic rice standards and seed standards. Thus, the objective of this research is to improve the organic glutinous rice seeds production for certification. The project employs participatory action research with 43 members of the Dao Laum Deuan Organic Rice Seed Community Enterprise. The research is divided into 3 phases, including 1) the preparation phase to prompt and survey the community for general information, 2) the research phase with community for problem identification and diagnosis, and planning for production development, and 3) the monitoring and evaluation especially the action for organic rice standard and rice seed standard. The practical guidelines to develop the farmers' potential in organic glutinous rice seed production are knowledge transferring and sharing, building a group management system, rice seed production planning, controlling and monitoring the rice seed processes, and networking for the group. By the 2nd year of conversion period (T2), the production meets organic standard, and to date fourteen members have certified their rice seed standard. In conclusion, the glutinous rice production increased from 335 kilogram per rai to 382 kilogram per rai.

Keywords: Sakon Nakhon province, Dao Laum Deuan rice seed group, Organic rice standard, Glutinous rice seed, Community enterprise



Participation of *Beauveria bassiana* Production Using Agricultural Waste in Baan Ton Mapraw Soong Community, Songkhla Province

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Abstract

The use of entomopathogenic fungi is one of the biological methods for promoting organic agriculture to reduce insecticide use. The objective of this research is to present *Beauveria bassiana* production using agricultural waste (AW) by the participation in Baan Ton Mapraw Soong community, Hatyai district, Songkhla Province. The 20 farmers participating in the project are selected by a purposive sampling method. The processes include: 1) design and development of engineering-technology-based *B. bassiana* production system, which contains local bio-chamber, local autoclave, and automatic control system incubator, and 2) transferring knowledge of *B. bassiana* production from AW. The produced *B. bassiana* presents the spore number in the range of 106-108 conidia/milliliter. After applying *B. bassiana* with crops of Cantonese vegetables, yard-long bean, eggplant, morning glory, and Chinese cabbage, it is found that farmers can reduce their insecticide cost by 7.72-16.92%. The community participation model indicates various important stakeholders - a gathering of community leaders and potential farmers, an operating committee for production planning and *B. bassiana* application, and a strong collaborative network. The network involves 1) Local government organization to coordinate and promote agricultural products, 2) School as a source of learning for agriculture and environment, 3) Public Health Office as the agency to promote the consumption of healthy agricultural products, and 4) Vendors for intermediary distributing agricultural products. These results indicate that farmers advance their knowledge and develop their practical skills as well as are able to disseminate the knowledge or extend it in a larger scale. In conclusion, the collaborative network promotes and upgrades sustainable agricultural products with a firm root in the local economy, society, and environment.

Keywords: Songkhla province, Baan Ton Mapraw Soong community, *Beauveria bassiana*, Agricultural waste, Community participatory



Biogas Dung Production: Community Participation Bangkro and Changhaitok Sub-District, Pattani Province

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Abstract

Reducing household expenses and recycling remains a constant challenge in the villages and community. Bangkro and Changhaitok sub-district communities, Khokpho district, pattani province addressed the challenge using community participation by producing biogas from dung. From 2017 to 2019, 40 farming families in Bangkro and Changhaitok sub-district, Khokpho district, Pattani province participated in this study and developed 1,200 liters of biogas digester. Research knowledge transfer training is operated and expanded to the community by transferring biogas production from dung technology to farmers' groups. The community uses the floating drum digester form to build a biogas digester. It is found that farmers use biogas as renewable energy in household gas in order to reduce cost of living and liquefied petroleum gas for 1,680 – 3,360 baht/year. Additionally, the sludge can be taken from gas fermentation pond for agricultural purposes. Economically, it can reduce household cost for 1,800-3,600 baht/year and reduce global warming, the environmental impact and dung-related health problems in the community. Finally, the local farmers are able to form a group to establish a learning hub for biogas production to those who are interested.

Keywords: Pattani province, Biogas, Dung, Technology transfer, Renewable energy



Development of Energy-Efficient Biomass Stove for Meretrix Casta Processing by Community Participation of Palian River Basin Community, Trang Province

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Abstract

This research aims to develop an energy saving biomass stove for Meretrix casta processing of Palian river basin, Trang province. The participatory action research (PAR) was performed with Ban Laem Meretrix casta processing group, Kantang district, Trang province. Research procedures included data collection, development of a biomass stove prototype, investigation of biomass stove and knowledge dissemination to Palian river basin community. The research showed that the technology could reduce boiling time of Meretrix casta from 268 to 195 minutes with the temperature in front of the stove of only 32 °C. This could reduce 65% of fuel consumption when compared to the homemade stove. In addition, the clam meat boiled on developed biomass stove was denser than that on homemade stove. The technology transfer to the community resulted in higher potential in production of Meretrix casta processing, from 800 to 1,600 kg/month. The income increased from 8,000 to 16,000 Baht per month. The total increased income from April 2019 to March 2020 was 192,000 Baht. In conclusion, the project also made use of material waste from cigarette wrapping production as alternative fuel to replace para wood, leading to 30 % of fuel cost; thus, enabling the technology transferred to Ban Na Hin Rad and Ban Tha-rue communities.

Keywords: Trang province, Palian river basin, Meretrix casta processing, Biomass stove, Technology transfer