IMPROVING THE EFFICIENCY OF PINEAPPLE PASTE PRODUCTION FOR THE COMMUNITY ENTERPRISE GROUP OF BAN MO MUSHROOM FARMS

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Abstract

The Ban Mo Mushroom Farm Community Enterprise Group is an organization with expertise in pineapple-based product processing, particularly pineapple paste. However, the current production process faces challenges in the drying stage, which is time-consuming and inefficient due to slow heat dissipation. This issue results in production losses and delays in the overall workflow. This study focuses on improving the cooling process for pineapple paste by developing a new approach that reduces cooling time, enhances heat dissipation efficiency, and lowers production costs. The aim is to accelerate the production process, minimize insect contamination, and simplify product storage. The expected outcome is an overall improvement in production efficiency, a reduction in waste, and the enhancement of the group's capacity to sustainably develop its business operations.

Keywords: Efficiency Improvement, Processing, Waste reduction

Introduction

The Ban Mo Mushroom Farm Community Enterprise Group is a community enterprise with extensive experience and expertise in various businesses, particularly in the processing and production of pineapple paste. The group, participating in a project involving pineapple paste processing, currently faces challenges with the drying process. The existing method slows down the cooling process, resulting in prolonged drying times and inefficiencies. This has prompted the need to identify ways to improve the production process to reduce waste in the pineapple paste production cycle. The goal is to make the production process faster and simplify storage, while also preventing insect contamination during the production process. These issues have led to efforts to improve the drying method for pineapple paste.

In the pineapple paste production process, certain steps result in unnecessary operational losses, leading to prolonged waiting times. This creates wasted time and slows down the overall workflow.

The previous process involved placing the pineapple paste in basins, which were ineffective at dissipating heat. Therefore, it is necessary to improve the cooling process for pineapple paste to enhance heat dissipation. This requires developing a drying method that cools the paste as quickly as possible to save time, increase efficiency, and reduce associated costs effectively.

Research Objectives

1. A study on the production process of candied pineapple.
2. Enhancing the production efficiency of candied pineapple for the Ban Mo Mushroom Farm Community Enterprise.

Scope of the Research

1. Population Scope

The study focuses on members of the Ban Mo Mushroom Farm Community Enterprise, registered under located at 218, Moo 2, Ban Mo Subdistrict, Si Chiang Mai District, Nong Khai Province. Specifically, the population includes 15 members who are directly involved in the production of candied pineapple.

2. Variable Scope

Independent Variables Current production process, challenges, and existing methods used in the production of candied pineapple.

Dependent Variables Production efficiency, including time, resource utilization, and quality of the final product.

Controlled Variables Location of study (Ban Mo Mushroom Farm Community Enterprise) and production methods used within the specified group.

3. Time Scope

The research and data collection will be conducted over a six-month period, from January to June 2024, to analyze and propose efficiency improvements in the production process.

Research Methodology

1. Research Methodology

This study adopts an applied research approach aimed at improving the production efficiency of candied pineapple within the Ban Mo Mushroom Farm Community Enterprise. The methodology combines both qualitative and quantitative methods to achieve comprehensive insights.

2. Research Steps

Literature Review Study related documents, research papers, and case studies to understand existing production methods and efficiency-improvement strategies.

Instrument Design and Validation Develop semi-structured interview questions, observation forms, and questionnaires. Validate the instruments for reliability and accuracy.

Data Collection Conduct interviews, observe production processes, and distribute questionnaires to community enterprise members.

Analysis and Interpretation Analyze the data using appropriate qualitative and quantitative methods to identify key findings.

Reporting Results Summarize findings and propose actionable recommendations for improving production efficiency.

3. Data Collection

Primary Data Collected through

1) Interviews Semi-structured interviews with 10-15 community members involved in the production process.

2) Observations Monitoring and recording steps, timing, and challenges during the production process.

3) Questionnaires: Distributed to gather feedback and suggestions from members.

Secondary Data

Gathered from production reports, prior research, and statistical records related to candied pineapple production.

4. Data Analysis

Qualitative Analysis

Use content analysis to extract themes, identify inefficiencies, and understand challenges in the production process.

Quantitative Analysis

Apply descriptive statistics, such as mean, standard deviation, and percentages, to evaluate production efficiency and member feedback.

Research Results

Discuss The research titled "Enhancing the Production Efficiency of Candied Pineapple for the Ban Mo Mushroom Farm Community Enterprise" produced the following results

1. General Information about the Community Enterprise

- The Ban Mo Mushroom Farm Community Enterprise consists of 15 members, most of whom are involved in production and product management.
- The current candied pineapple production process consists of five main steps: raw material preparation, processing, drying, packaging, and storage.

2. Current Production Process

- The candied pineapple production still relies mainly on traditional methods, which affect production time and product quality.
- Key obstacles in the production process include.
  1) Time-consuming and inconsistent raw material preparation.
  2) Irregular processing, leading to variations in taste and texture.
  3) Energy-intensive and delayed drying processes.

3. Issues and Factors Affecting Production Efficiency

- Lack of modern technology, such as energy-efficient drying equipment.
- Insufficient training or skill development for members.
- Inefficient time management in production, leading to delays.

4. Recommendations for Efficiency Improvement

- Technology Introduce equipment to streamline raw material preparation and improve drying efficiency, such as solar-powered dryers.
- Production Process: Standardize each production stage, such as setting appropriate time and temperature for drying.
- Skill Development: Conduct training programs for members to learn modern production techniques.
- Management: Implement systematic scheduling to minimize time loss.

5. Expected Outcomes from Improvement

- A 20% increase in production efficiency by reducing production time and enhancing product consistency.
- Reduced energy costs through the adoption of new technology.
- Improved product quality, enabling better competitiveness in the market.

Discussion

The discussion of this study, titled "Enhancing the Production Efficiency of Candied Pineapple for the Ban Mo Mushroom Farm Community Enterprise," addresses the interpretation and implications of the findings as follows

1. Interpretation of Key Findings

The results indicate that the current reliance on traditional methods significantly hinders production efficiency. Time-intensive raw material preparation and inconsistent drying processes were identified as major bottlenecks. These findings suggest the need for adopting standardized procedures and modern technologies to address these inefficiencies.

The study also highlights the limited technical knowledge and skills of community members, which further contributes to inconsistent product quality. This reinforces the importance of skill development programs.

2. Comparison with Previous Research

The finding that modern equipment, such as solar-powered dryers, can enhance production efficiency which found that integrating energy-efficient technologies in food production processes reduced operational costs and improved output consistency.

However, this study also emphasizes the role of raw material selection in ensuring consistent quality, which was not a primary focus in earlier studies. This new insight underscores the importance of upstream processes in production efficiency.

3. Practical Implications

The adoption of recommended technologies, such as solar-powered dryers, is expected to significantly reduce energy consumption and production delays. This aligns with the enterprise's goal of maintaining sustainability while improving efficiency.

Standardizing production steps and providing training for members can lead to long-term improvements in product quality, thus increasing the market competitiveness of candied pineapple.

4. Limitations of the Study

This research was limited to one community enterprise, and the findings may not be generalizable to other enterprises with different contexts or scales of operation.

Financial aspects, such as the cost of implementing new technologies, were not analyzed in depth. These factors may influence the feasibility of the proposed recommendations.

Recommendations

1. Future studies should explore the financial implications and cost-benefit analysis of adopting modern technologies in community enterprises.
2. Comparative studies across multiple community enterprises could provide broader insights into common challenges and best practices in production processes.
3. Investigating market trends and customer preferences can help align production improvements with consumer demand.

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