

Factors Affecting to Skill Training in Trimming Process

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Abstract

This research aims to study of factors influencing trimming skill in pineapples productivity which will lead to an increase in productivity in operations. The results showed that employees' skill is low with an average of 3 - 4 pieces per minute and the average waste was 2.5%. The group population is selected sampling group of employees 41 people with a duration of 5 months period, using the technique of providing feedforward feedback and peer learning techniques (Peer-Assisted Learning). The study found that male employees were more productive than female employees with an average productivity of 10.33 pieces per minute. Part-time employees were more productive than Permanent employees with an average productivity of 9.29 pieces per minute. The age range suitable for work was in the range of 21 - 30 years with an average productivity of 8.28 pieces per minute. In addition, it was found that the employee that has work experience period in between 1 - 5 years is the most effective. They have the highest productivity with an average of 8.27 pieces per minute. The training by using the technique giving information before practice and feedback (Feedforward and Feedback) with peer learning techniques (Peer-Assisted Learning) found that the pineapple trimming skill increased by 39% compared to the pre-training data collection, and reduce the defects caused by the pineapple processing process by 60%.

Keywords: Trimming Skill Training, Productivity, Training

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Introduction

The food industry is an industry that is very important to the country's economic system. In terms of production value, employment, and exports, Thailand's food industry is an industry. There is a high potential for production for domestic consumption and export. Because Thailand has a stable and prosperous agricultural production basis, quality produce is an important key. In addition, employee motivation also affects production efficiency and organizational development to improve in a way. A processed fruit production company is a company that engages in the production and export of canned fruits and fruit juices. It uses relatively high levels of labor. The company therefore wants to improve work methods in some areas to increase productivity and operational skills. From the training of employees' skills Must focus on work processes and operators. Similarly, Kritsada Chianwattanasuk [1] studied the motivation that affects employee performance, a case study of Ajinomoto Company. Betagro Specialty Foods Co., Ltd., found that personal factors in terms of gender, education, age, and different experiences will have different effects on work performance in terms of time, quality, and quantity of work. including relationships with supervisors will affect work to increase employee skills and lead to better productivity. The researcher conducted a research study for example Akaradet Maichan [2] studied the factors that affect the work efficiency of employees in the production line machinery installation industry in Songkhla Province. It was found that the work progress and stability in old age, including the environment in workplace. In additional Mubashar Farooq [3] has conducted a study on the impact of training and providing information before practice and feedback to the performance of employees. It was found that providing information before practice and providing feedback resulted in improved employee performance, like Chotima Nooprik [4]. Providing information before practice and feedback to further student learning was found which students were more efficient. Saisuda Pantrakul [5] analyzed the concept of peer-to-peer learning with hearing-impaired learners and normal learners and found that students improved. The research indicates that investments in training employees in quality control, safety, material requirements planning, and soft skills are worthwhile. As a result, organizations benefit from knowledge-driven revenue cycles, innovation, and creativity. Therefore, the technique of giving information before practice and feedback (Feedforward and Feedback) and the technique of peer-to-peer learning were chosen. (Peer-Assisted Learning) to be applied to employees in the production line and develop employee skills for better performance and for employees to help each other. In addition, it is a guideline for solving problems and improving the factory for use in developing production lines in the future. The feed forward and feedback training was able to helps in reducing the number of people in operations and increasing skills in operations. This leads to a reduction in waste and helps to increase quality output, low cost, and creates additional income.[6] It gives confidence to customers and creates stability for the company. It also directly affects the increase in productivity.

Methodology

The researcher observed and followed up on the evaluation of a specific sample group. The sample group must be willing to test and ready to develop themselves. They are selected as follows: 10 people worked on the production line in the pineapple eye cutting section, which consisted of one rack, Size 70, 80, 83. They have passed the preliminary test that there is an understanding of eye pecking and are ready to cooperate in collecting results to find trimming skill training for employees to increase productivity (Figure 1 and 2).

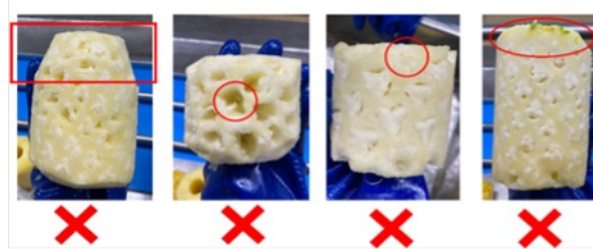


Figure 1: Example of defective pineapple



Figure 2: Example of processed pineapple

The feed forward is the provision of context for what one wants to communicate prior to that communication. In activity, feedforward creates expectations for the sample group. When an expected experience occurs, this provides confirmatory feedback. People with a peer supporter can share knowledge and experiences during training by being deployed to teach and staying close to people who work in the pineapple trimming process.

Collecting the Data of Staff's Performance

Collect the variable data that impacts on the staff's capacity as followed: Julalak Paka et. al. [6].

“Capacity” means the amount of product that can produce by using measurement unit as piece per hour and transform to piece per minute for plotting the graphs.

“Defect” means the waste of pineapple flesh (pineapple shreds) from peel and tweak the eyes process which is calculated in percentage from the formula as shown below and the result is in percentage of raw material defect.

Equations

Equations to Find the Defect Result in the workpiece that the sample recorded (1).

$$D = \frac{x - (x \times \frac{w}{t})}{f} \quad (1)$$

Explanation

D = Defect value (Percentage)

x = Weight of pineapple shreds from peel and tweak the eyes process (Kilograms)

w = Count of pineapple that is defected (piece)

t = Total pineapple that comes in the process (piece)

f = Count of good pineapple after process (piece)

Training Station Layout

The pineapple peel slides down the conveyor belt. The crew will then cut the pineapple afterwards. The staff will remove the remaining of the pineapple's green skin, prick out the eye, clean it, and then release it onto the belt as shown in the Figure 3.

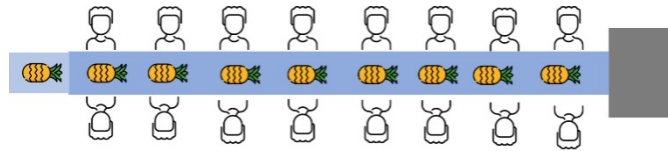


Figure 3: Schematic diagram of the process of chain pecking pineapple eye

Results

Productivity of pineapple trimming production line size 70, Employees of the 70-production line gave a very good response. It was found that employees competed within the production line to develop better. In addition, employees also help fellow employees who are not able to meet their goals and help develop their friends to have expertise until they reach the goal of becoming Grade A employees. On a production line size of 70, there is information given before practice and feedback, for a total of 7 It was found that there was an improvement in productivity and a reduction in defects. Round 1 is the employee's normal operation. Without having yet provided information before practice (feed forward) and feedback each employee has production that has not yet met the specified criteria of 8 balls per minute because the employee performed the job without having seen the communication media. Learn (work instruction) with video media on new methods of working. But it was operating in the same way as before. But when developing skills and extending time for employees to practice and provide information before practice and feedback, and have employees watch learning media (work instruction) and media that are videos of model employees (best practices). It will be seen that in rounds 2–8, it was found that most employees were able to work with increased productivity continuously for about a round. At 4–5, the productivity began to increase until it reached 8 balls per minute. In addition, it was found that employee number 2 had the specified productivity of 8 balls per minute in round 3, while the other employees still did not meet the criteria because employee number 2 had high competition. And it was found that the employees were in the age range of 20–30 years, with working periods of 1–5 years, male gender, but other employees' numbers were in the elderly. Their ages ranged from 40 to 45 years old. In addition, it was found that employee number 8 had the specified output of 8 balls per minute in the 3rd round and was not in the process of using the size 70 rail all the time. He was taken out to work on the line. Other production, but the employee can do this because employee number 8 was close to employee number 2. Employee number 8 was in the age range of 20–30 years, with a working period of 1–5 years and gender were male.

It can also be explained that workers on a production line with a capacity of 70 were responsible for the flaws resulting from the eye-trimming of pineapples. Due to the employees' adherence to their own level of familiarity during the first round, the eye-pecking flaws were high—roughly 1.40% or higher. Following the guidelines, flaws were found to have decreased to about 0.48%, or less than 1%. When information was given prior to practice and feedback (Feedforward and Feedback) in the second round. Employee number 1 was discovered to be ill, making data collection impossible. Employee number 2 discovered in the first round that losses or defects were roughly 1.40%, but when information was provided before practice and feedback (feedforward and feedback), it was found that defects

or losses gradually decreased, with an average of 0.2–0.3%. and employee number 8 for the first time found Defects or losses were approximately 0.80%, but when information was provided before practice and feedback (feedforward and feedback), it was found that defects in the 3rd round decreased to approximately 0.40%, consistent with other employees. In the third round, the other rounds were not collected because employee number 8 was removed to work on another production line. But the employee was able to perform well because employee number 8 has a position standing close to employee number 2. It will be found that employee number 8 has high skills and can learn quickly. Therefore, working with employees with low skills in proximity to skilled employees contributes to employee motivation and learning from each other.

The productivity of the pineapple trimming production line was 80. It can be explained that Round 1 was the employee's normal work. which has not yet provided information before practice and feedback (Feedforward and Feedback). From the first round of information provided before practice and feedback (Feedforward and Feedback), it was found that each employee has production that has not yet been met. The specified threshold is 8 balls per minute because most of the employees were elderly. They are in the age range of 41–50 years; most are female, making them learn quite slowly. But when the time is extended for employees to have training and provide information before practice and feedback (feedforward and feedback). Learning media (work instruction) and video media of model employees (best practices) It could be seen that in each round where information is provided before practice and feedback (feedforward and feedback), most employees was able to work and increase productivity. Continuously increasing gradually Everyone will be at the same level. Overall, in the 8th round, the productivity began to trend up until it reached 8 balls per minute. Everyone met the target set in the 8th round. In addition, employee number 2 got the specified productivity of 8. goals per minute in the 5th round, while other employees got 6 goals per minute, which still hasn't met the criteria. It was found that employee number 2 was in the age range of 31–40 years, with a working period of 1–5 years, and was female. But other employees are elderly, with an average age of 41–50 years.

Development of reduced defects on production line size 80. It can be explained that defects or losses from trimming pineapple buds are caused by the performance of the employees of the 80-year production line. In the first round, the employees performed their duties according to their own familiarity, so the defects due to eye-scrubbing were quite high. is approximately 2.2% or more. When information is provided before practice and feedback (feedforward and feedback) in the 2nd round, it will be found that defects have decreased by approximately 1.40%, still not meeting the specified criteria, which was not more than 1%. In addition, it will be found that employee number 8 in the first round found that defects were approximately 1.40%, but when information was provided before practice and feedback (feedback and feedback), it was found that defects gradually decreased, with an average of 0.30–0.40%, due to a service life of more than 10 years and that he was a factory trainer. While employee number 2 in the first round found defects were approximately 1.50%, when information was provided before practice and feedback (feedforward and feedback) in rounds 8–9, it was found that defects decreased. has an average of 0.20–0.30%, while other employee numbers have an average of 0.30–0.30% fewer defects.

Productivity of pineapple trimming production line size 83. It can be explained that Round 1 is the employee's normal operation. without having yet Providing information before acting and giving feedback (Feedforward and Feedback), which was from giving information first Practice and feedback (forwarding and feedback) Round 1 found that each employee has

production that has not yet met the specified criteria of 8 children/minute because the employees performed their work without having seen the learning media (work instruction) and video media. But it was operating in the same way as before. When extending the time for employees to practice with information before practice and feedback (Feedforward and Feedback) and allowing employees to watch learning media (Work Instruction) and media that are videos of model employees (Best Practice), it will be found that the employees of the production line size 83 have developed quite quickly. It could be seen that with each round of information given before action and feedback (forward and feedback), there has been an improvement. It was also found that most of the employees of production line size 83 were in the age range of 20–30 years, with a working period of 1–5 years. Overall, by providing information before the seventh round of practice, productivity began to tend to increase. until reaching 8 balls per minute, exceeding the set target. In addition, it was found that employee number 5 achieved the specified productivity of 8 balls per minute in the 3rd round, but while other employee numbers had not yet met the criteria, it was found that employee number 5 was still old. Between 20 and 30 years, the working period was 1–5 years, and the gender was male. In addition, it was found that employee number 6 had a specified productivity of 8 balls per minute in the 4th time, with employee number 6 having a standing position next to employee number 5, making it more than that. competition, but the age of employee number 6 was in the age range of 41–50 years, the working period was 1–5 years, and the gender was female, while other employees will receive the output as specified in the 6th–7th round.

With improved defect reduction on production line size 83, it could be explained that the defects from pineapple eye-cutting were caused by the work of employees on production line size 83. In the first round, the employees performed the work according to their own familiarity, causing the eye-pecking defects to be rather high. It was approximately 1.65% or more. In the second round, it was found that the defects of some employees were higher because they were not yet accustomed to working in a new way and wanted to meet the set goals. Therefore, there were more defects. When employees become accustomed to the new way of working, this makes the average defect of every employee approximately 1.70%. It was found that employee number 6 in round 3 had defects at 0.80%, while for employees' numbers 1, 2, 3, 4, 5, 7, 8, 9, and 10, the average defect rate was 1.3%. Therefore, it could be seen that employee number 6 was an employee who had skills in performing work that reduced defects better than other employee numbers. And in rounds 4–8, it was found that all employees' defects decreased equally, with an average of 0.60%. The specified criteria were not more than 1%.

Productivity and Defection

After training employees by means of providing information before practice and feedback (feedback and feedback), it was found that during operation, the average productivity increased by 39% compared to the first and last time while operating. It was also found that productivity increased and defects in the process from operations were reduced on average by 60%, as shown in Table 1, 2.

Production line	Before improvement	After improvement	% Increasing
70	7.53	9.36	19.55
80	4.61	8.73	47.16
83	4.69	9.66	51.45

Table 1: Comparison the % productivity from employee pineapple-trimming before and after training of each size

Product line	Before improvement	After improvement	% Decrease
70	0.38	0.3	21.05
80	1.59	0.34	78.62
83	1.62	0.28	82.72

Table 2: Comparison of % defect before and after training by using feed forward & feedback (Std. %defect 0.80%)

Conclusion

The 70-size production line in collecting the first round before starting to develop skills for employees. There was a product that has not yet been made by the standard criteria specified 8 balls/minute. The average of 5.2 balls/minute and the defects from the chopped eye chopper up to 1.4 %, which was more than the specifications set at 1 % after the operation. Providing information before operation and feedback by developing skills through the working manual. The best work sample video in the 2nd - 8th round of employees has been developed to meet the target. All employees can reduce the defects from pineapple eyes lower than the average requirements at approximately 0.48.

The 80 -size production line found that in the first round of data collection before starting to develop skills for employees. The average productivity was 3.4 balls/minute, which had not yet been by the standard criteria of 8 balls/minute and defects from pineapples up to 3.5 %, which was more than the specifications set at 1 % after providing information. Before the feedforward and feedback and learning through the working manual and the best work sample video in the 2nd - 9th round. It can be observed that employees have improved continuously until they can pass the 8 -8-minute standards per minute. Pineapple eyes were lower than the 4th round of 0.62 %.

The 83-size production line found that in the first round of data collection before the development of skills for employees. The average productivity was 3.8/minute, which had not yet been by the standard criteria for 8 balls/minute and defects from pineapples up to 2.6 %, which is more than the specifications set at 1 % after providing information first. Feedforward and feedback by developing skills through the work guide and videos, samples of the best work from the prototype staff, in the 2nd round of the staff, the employee has developed in a better way. Continuously until the 7th round, most employees can pass the standard criteria, and in the 4th round, can reduce the defects from pineapple eyes by everyone's requirements. In addition, found that an average of 39 % increased productivity compared to the first round of data collection that had not been developed. The defects caused by the production process decreased by 60 % and when the production line was analyzed, it was found that factors that influence employees' skills training for increased productivity. Point out that male employees were effective in operating better than female

employees, with an average productivity of 10.33 per minute. Daily employees were more effective than monthly employees, with an average productivity of 9.29 per minute. Suitable for operations will be in 21 - 30 years, with an average productivity of 8.28 per minute. In addition, it was found that the age of 1 - 5 years had the most performance, with an average productivity of 8.27 minutes per minute.

The finally, the feedforward and feedback technique has proven to be the best way to train and develop the staff's skills. After the staff has been trained about the "peel and tweak the eyes" procedure, it increases the staff's performance. The result shows that they understand better, grow in their performance, and work more efficiently. Furthermore, productivity increased whether employees work the same amount of time or less. Thus, the key factor for success was the peer-assisted learning strategy, including feed-forward and feedback training techniques as well.

Suggestion

From the study of factors that influence the skills of staff skills for production, Human resource will use to plan for people to work.

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