Inventory Policy Control Using a Continuous Review Model Based on Information Systems: A Case Study in a Restaurant Industry

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ABSTRACT

The development of information technology has become a necessity for every company, one of which is the optimization of inventory planning. The joint warehouse owned by the Chickenpedia Restaurant which has to supply various types of raw materials to the three restaurant branches often experiences stock outs and has to make emergency orders resulting in losses. For this reason, it is necessary to control the inventory of raw materials in the shared warehouse so that stock outs can be overcome and losses that arise can be minimized. One of them is by using the Continuous Review method. By using this method, the optimal order quantity and reorder point will be obtained. The weakness is iterative calculation and monitoring of raw material stock manually. For this reason, it is necessary to support an information system to speed up and make it easier to calculate when to place an order and how many orders of raw materials to suppliers so as to reduce the occurrence of running out of raw materials. The Information System can also monitor the stock of raw materials every day in real time based on the number of incoming and outgoing goods that enter the application.

Keywords: Information system; continuous review model; restaurant industry

1. INTRODUCTION

Chickenpedia is a restaurant located in Yogyakarta with the main menu of Chicken Geprek. This restaurant has three branches in Yogyakarta, namely on Jalan Perumnas UPN, Jalan Garuda UMY, and Jalan Kaliurang KM.13.5 UII. The three Chickenpedia branches have one shared inventory warehouse located in Condongcatur, Depok District, SlemanRegency, DIY. Chickenpedia's warehouse is responsible for meeting requests for various types of raw materials from the three Chickenpedia branches every day. The types of raw materials they manage are quite numerous and varied. Every night each branch fills out a raw material requirement form and gives it to the warehouse then the requested raw material will be sent in the morning. Chickenpedia's warehouse obtains raw materials from several suppliers.

Chickenpedia's warehouse manages various types of raw materials by placing orders with several suppliers in order to be able to meet the demands of all branches. The amount of raw materials ordered is determined from the requests of all branches the previous day and seeing the stock in the warehouse. Generally, the demand from each branch of the restaurant is quite varied and fluctuating. Usually new orders are made when the stock of raw materials is almost exhausted considering that most of the raw materials have a short expiration date. If there is a shortage of stock (stockout) or if the warehouse is unable to meet the branch's request, then an emergency order is made on the same day at Lotte Mart or at the nearest store at a price that is much more expensive than the price of materials purchased at the supplier.

This method of raw material management will certainly cause stockouts in several different raw materials so that emergency orders must be made and cause losses because raw material prices are more expensive and there are additional transportation costs that must be incurred. Emergency orders occur on 20 days of the previous month with different raw materials. Losses caused by lack of stock, if this problem

is not fixed immediately, it will cause continuous losses for Chickenpedia Restaurant.

The warehouse inventory system with Chickenpedia needs to be improved to reduce losses from stockouts that can occur. Optimization of raw material orders can be done using the Continuous Review Model method. The use of the Continuous Review Model method will obtain the optimal order size and reorder point value. This method has a weakness, namely the stock of raw materials must be monitored manually every time to determine the availability of goods, so it is necessary to develop an information system that can monitor continuously. An information system (SI) is presented to calculate the time and size of ordering raw materials from a joint warehouse to suppliers so as to reduce the occurrence of stock outs of raw materials. SI can monitor the stock of raw materials in the shared warehouse every day based on the number of incoming and outgoing goods entered into the application.

This study intends to design an information system for controlling raw material inventory in the warehouse along with the Continuous Review method to minimize stockout so that the total inventory cost is minimal. Application development is useful to simplify the calculation of order size and reorder point which can change at any time and is able to assist users in monitoring the stock of raw materials in the shared warehouse every day in real time based on the number of incoming and outgoing goods entered into the application.

2. LITERATUR REVIEW

Inventory of raw materials is an important part of a business unit. Without raw materials, the production process will not run. Therefore, the availability of raw materials is unavoidable. However, the more raw materials provided, the more invested capital that cannot be used for other which more profitable purposes and the greater the risk of expired products or declining quality. The less raw materials available, the greater the possibility of a stockout. As a result, the greater the loss of opportunities for profit. Therefore, the inventory needs to be regulated in such a way that the risk of loss that can be experienced by the company can be minimized (Nafisah et al., 2016a). One way to control

inventory in order to minimize the costs incurred is to set the optimal number of orders and carry out continuous control with the production department by considering waiting times (Gao et al., 2015).

Broadly speaking, the basic principles of controlling the inventory of goods or raw materials (materials) are divided into two models, namely the Economic Order Quantity Model (EOQ) and the Economic Order Interval Model (EOI). The approach of these two models is known as the traditional model because both models are static deterministic. Where there is an assumption that the demand parameters are known with certainty and are continuous over time (Elsayed & Boucher, 1994). Meanwhile, for cases where demand is dynamically deterministic (demand varies in each period), then to determine the optimal ordering policy, the Wagner Within algorithm or the Silver Meal algorithm can be used (Tersine, 1994). Some deterministic models based on EOQ and EOI do not require a safety stock because all the influential parameters are known for certain and there is no shortage of stock (stockout) meaning that all demands or needs can be met (Bahagia, 2006).

However, in the real world the demand rate varies in each period and experiences uncertainty so that traditional and static inventory control becomes inefficient (Sadeghian, 2016). After-sales service is very important in dealing with customer satisfaction, an obstacle that is often faced by make-to-order companies is the uncertainty of the number of product orders that affect raw material planning which becomes difficult because it can increase inventory costs (Chen et al., 2018). Therefore, an inventory control model was developed that accommodates the uncertainty of parameters that influence the determination of inventory policy, namely the Continuous Review Model and the Periodic Review Model (Gao et al., 2015).

The Continuous Review Model has not considered the characteristics of the goods being managed, it still assumes that the goods will not experience a decrease in quality over time. In fact, many goods, such as foodstuffs, have an expiration date. Therefore, it is important to consider dynamic lot sizes on multiple product items that have an expiration date or short life to avoid material damage and consideration of

storage costs that are correlated with storage time (Jing & Lan, 2017). Several studies on inventory control with the theme of products that have an expiration date, including in his research (Nafisah et al., 2016a; Jing & Lan, 2017; Nafisah et al., 2011; Nafisah et al., 2016b).

Inventory will create management policies and procedures regarding the operation of a production. These policies and procedures stem from external expectations about product demand and material supply and from internal constraints such as available capabilities, financial capacity and resources. If all these constraints are considered, of course if it is done manually, the processing will take a long time and be inefficient. Computered Based Information System (CBIS)technology relies on computers to perform data processing by utilizing installed application software (Muhsin et al., 2018). It is important for companies to have software

3. METHODS

The object of this research is the raw material inventory control system in the warehouse with Chickenpedia. The Chickenpedia warehouse itself is located at Jalan Super, Dero, Condongcatur, Depok, Sleman, Yogyakarta. The data needed in this study include data on the types of raw materials needed, demand data on the three branches of the restaurant, supplier data, lead times, data relating to storage and ordering of goods, and other data.

The approach used in this research is a collaboration between the Continuous Review Model method and the System Development Life Cycle (SDLC) method. Continuous Review Model is an optimization model to determine inventory control policies with uncertain demand or static probabilistic nature. This model is also known as the two-box system, because this model works using the 2- box principle. The first box contains operating stock which is limited to the reorder point, if the goods in the first box are out of stock, then the goods in the second box will be used. The maximum limit of the second box is thereorder point level and the minimum limit is zero. The resulting decision variables are the optimal order quantity and reorder point. To get the optimization value, it cannot be obtained directly, but it is necessary

to do iterative calculations using the Hadley-Within algorithm approach (Dewi et al., 2021). The pattern of inventory levels using the continuous review model can be seen in Figure 1. The parameter notation used in this model is as follows:

p : price of goods per unit
A : ordering cost per order
h : holding cost per unit per period
ss : safety stock
σL : standart deviation during lead time
$z\alpha$: safety factor, a standard normal random variable with a safety level of $(1 - \alpha)$
D : demand rate
Q : order quantity per cycle
PC : expected purchase cost per period
OC : expected ordering cost per period
HC : expected holding cost per period
RC : expected rework cost per period
TC : expected total cost of inventory per period

The assumptions used in this model are:
1) Normal distribution of demand
2) Fixed lead time
3) The price of the item is fixed and does not depend on the size of the item ordered
4) Fixed ordering fee for each order
5) Fixed cost per unit per year
6) Parameters considered are demand, ordering cost and holding cost

The objective function of the Continuous Review model is the minimization of the expected total cost of inventory per year. Expected total cost of inventory per year (TC) consists of expected cost of purchasing per year (PC), expected cost of ordering per year (OC), expected cost of holding per year (HC), and expected cost of shortage of inventory per year (SC). The decision variables are order lot size (Q), reorder point (r), and safety stock (ss).

Figure 1. The pattern of inventory levels using the continuous review model

Expected purchasing cost is

$$PC = P.D \qquad (1)$$

Expected ordering cost is

$$OC = A.\frac{D}{Q} \qquad (2)$$

Expected holding cost is

$$HC = w_1.h.\left\{\frac{Q}{2} + r - \mu + \bar{S}(x)\right\} + w_2.h.\left\{\frac{Q}{2} + r - \mu\right\} \qquad (3)$$

Where,

$$w_1 = \begin{cases} 1, & \text{if lost sales} \\ 0, & \text{other} \end{cases} ; \quad w_2 = \begin{cases} 1, & \text{if backorder} \\ 0, & \text{other} \end{cases} \qquad (4)$$

$$\bar{S}(x) = \int_r^\infty (x - r)f(x)dx \qquad (5)$$

Expected shortage cost is

$$SC = \pi.\frac{D}{Q}.\bar{S}(x) \qquad (6)$$

Expected total cost of inventory per year are

$$TC(Q,r) = P.D + A.\frac{D}{Q}$$
$$+ w_1.h.\left\{\frac{Q}{2} + r - \mu + \bar{S}(x)\right\}$$
$$+ w_2.h.\left\{\frac{Q}{2} + r - \mu\right\}$$
$$+ \pi.\frac{D}{Q}.\bar{S}(x) \qquad (7)$$

To find the optimal Q and r, then

$$\frac{\partial TC(Q,r)}{\partial Q} = 0 \ \text{dan} \ \frac{\partial TC(Q,r)}{\partial r} = 0 \qquad (8)$$

$$Q^* = \sqrt{\frac{2d\{A + \pi\bar{S}(x)\}}{h}} \qquad (9)$$

If backorder case:

$$\int_r^\infty f(x)dx = \alpha = \frac{hQ^*}{\pi D} \qquad (10)$$

If lost sales case:

$$\int_r^\infty f(x)dx = \alpha = \frac{hQ^*}{hQ^* + \pi D} \qquad (11)$$

According to Hadley and Within (1963), if x is a random variable of demand during lead time which is normally distributed with a standard deviation of demand during lead time σ, then $\bar{S}(x)$ can be expressed as

$$\bar{S}(x) = \frac{\sigma}{\sqrt{2\pi}}.e^{-\frac{1}{2}z_\alpha^2} - \frac{\sigma.z_\alpha}{\sqrt{2\pi}} \int_{z_\alpha}^\infty e^{-\frac{1}{2}z_\alpha^2}dz$$

Where,

$$z_\alpha = \frac{r - \mu}{\sigma_L}$$

$$r = \mu + z_\alpha.\sigma_L \qquad (12)$$

The value of z_α is the value of the standard normal variable z, on the right of which there is an area of α, where the value of α indicates the opportunity for stockout to occur. The value of z_α can be looked up in the standard normal table. And is demand during lead time $\mu = D.L$

While the standard deviation of demand during the lead time $\sigma_L = \sigma\sqrt{L}$. If,

$$f(z_\alpha) = \frac{\sigma}{\sqrt{2\pi}}.e^{-\frac{1}{2}z_\alpha^2}$$

$$\psi(z_\alpha) = \frac{\sigma.z_\alpha}{\sqrt{2\pi}} \int_{z_\alpha}^\infty e^{-\frac{1}{2}z_\alpha^2}dz$$

Then,

$$\bar{S}(x) = \sigma_L[f(z_\alpha) - z_\alpha\psi(z_\alpha)] \qquad (13)$$

The approach used in this research is a collaboration between the Continuous Review Model method and the System Development Life Cycle (SDLC) method. The methodology used in this study is the SDLC approach, which is a systematic approach to designing, designing, implementing and evaluating a system. The data processing in this study consists of several steps as follows:

1) Identify the flow of information systems, information system requirements, and data requirements of the Chickenpedia inventory system.

2) Calculating aggregate planning on demand data for all raw materials. This calculation is needed to equalize the units of various types of raw materials so that demand forecasts can be calculated.

3) Forecasting aggregate demand using the Moving Average, Weighted Moving Averages, and Exponential Smoothing methods. The best forecasting method is determined by calculating the MAD of each method and selecting the smallest result.

4) Disaggregate the results of demand forecasting. The goal is to return the aggregate unit to the initial unit of each raw material.

5) Determining the optimal Q and reorder point, with Wagner-Within algorithm the following stages:
   a) Set $\bar{S}(x) = 0$, and calculate $Q^* = Q1$ use equation (9).
   b) Calculate the value of α using

equation (10) for backorder case or equation (11) for lost sales, then determine the value of z_α in the standard normal table. Then determine the value of r^* using equation (12).

c) Calculate the value of $\bar{S}(x)$ using equation (13). Then determine $f(z\alpha)$ and $\psi(z\alpha)$ using Table 5.3 (Tersine, 1994) or Table B (Bahagia, 2006).

d) Calculate the value$_2$ of Q^* using equation (9)

e) Repeat steps b) to d), such that the two consecutive values of r_i dan r_{i-1} as well values of Q_i dan Qr_{i-1} are nearly equal.

f) The final values for Q and r calculated in step e) are the optimal solutions of the order lot quantity and the reorder point

6) Calculating the total cost of inventory to find out the costs incurred when controlling inventory using the Continuous Review method.

7) Design and implementation information system with the following stages:
   a) Identify the system
   b) Arrange the flow of information systems
   c) Making Flowcharts
   d) Creating Data Flow Diagrams (DFD)
   e) Creating an Entity Relationship Diagram (ERD)
   f) Create relationships between tables
   g) Database design
   h) Implementing the system

4. RESULT AND DISCUSSION

4.1. Data Collection

Suppliers who cooperate with the management of Gudang Bersama Chickenpedia in supplying goods as many as 13 main suppliers with 42 different types of goods and at certain prices (see Table 1). Each supplier has a different delivery lead time. So far, the Joint Warehouse in ordering goods to suppliers only intuitively. It turns out that this way often results in a shortage of supplies. If there is a shortage of supplies, an emergency order is made to an alternative supplier, of course the price of the goods is higher than the price at the main supplier.

4.2. Aggregate Planning

Aggregate planning is done by equating the units of all raw materials, namely into units of rupiah. The first step that must be done is to calculate the conversion value by dividing the price of each raw material by the price of the highestraw material. The conversion value will be used as a multiplier value for the number of requests so that all raw materials have the same unit. After all demand is converted, the proportion value is calculated by dividing the total aggregate demand for each raw material by the total aggregate demand for the whole. The results of the calculation ofthe conversion value and the proportion of aggregate planning can be seen in Table 2. The aggregate demand data can be seen in Table 3.

4.3. Aggregate Demand Forecast

The forecasting method used in this paper is the time series method, which is a forecasting method using the analysis of the relationship pattern between the variables to be estimated and the time variable. Forecasting a time series data needs to pay attention to the type or pattern of data.

Based on the data pattern for each raw material has a trend pattern, so that demand forecasting is done using the trend pattern forecasting method. In this paper, three forecasting methods are used, namely the moving average, weighted moving average, and exponential smoothing methods. The forecasting method chosen is the one that gives the smallest error, namely the moving average forecasting method. The results of forecasting aggregate demand can be seen in Table 4. The disaggregation of demand forecasting results can be seen in Table 5.

4.4 Determining Q* and r*

Determination of optimal Q, reorder point (ROP), and safety stock (ss) with the complete Hadley-Within algorithm can be seen in Table 6.

4.5 Design and implementation information system

4.5.1. Program Development

Inventory planning information system development is built using Basic programming language and Microsoft Excel database. Hardware and software used to build

information systems: Processor Intel Core i5 M520 2.4GHz, RAM 4 GB, OS Windows 7, *Software* Visual Basic for Application (VBA), and *Software* Microsoft Excel 2016.

4.5.2. System Implementation

The implementation of information systems in the management of the Chickenpedia Restaurant can be seen on Figure 2 to Figure 8. Where Figure 2 shows the front page interface, Figure 3 shows the request data input interface, Figure 4 is the order data input interface, Figure 5 is the supplier data interface and raw material data, and Figure 6 shows the warehouse cost data interface.

The design of the application made, especially on the implementation of the homepage display interface, is combined with the calculation results to make it easier for users to find out information on the calculation results, namely the value of the quantity of raw material orders, reorder points and the amount of available stock. The calculation results are calculated automatically every time you input data every day, so there is no running time in the calculation. The longest running time is on the data input request for each branch, which is 18 seconds. On the data input interface, the available stock of raw materials is displayed so that users can also estimate which raw materials are in short supply and will buy raw materials in an emergency so that branch demand remains fulfilled.

4.5.3. System Test

System testing is the stage where the system that has been implemented will be tested on the menus and system components that have been created and applied to determine the sustainability process that occurs so that the system can run properly. The system testing carried out consisted of two kinds of trials, namely white box testing and black box testing. The results of the calculation of the black box and white box test questionnaires are 3.8 and 3.6, respectively. Based on a scale of 1-5, the results of these calculations state that the respondents agree with the author's statement that the information system designed runs well in general.

Based on the comparison of the amount of stock of raw materials after design and before design, there was a decrease in the total stock of raw materials from 2605 to 2101, and an increase in the average number per day for 26 raw materials so that the possibility of stock out was reduced. The loss that occurred in the shared warehouse due to stock out in May 2021 was Rp. 1,702,300. The loss was obtained from the difference in the price of goods at the main supplier and alternative suppliers multiplied by the number of empty items added to the cost of an emergency order in the May 2021 period, which is 20 days.

Based on the calculation of the application that has been designed using the Continuous Review method, a total storage cost of Rp. 504,900 is obtained in the next 4 weeks after May 2021

Table 1. Price of materials

Material Code	Supplier Code	Main Supplier's Prices, IDR	Alternative Supplier's Prices, IDR	Lead Time, days	Material Code	Supplier Code	Main Supplier's Prices, IDR	Alternative Supplier's Prices, IDR	Lead Time, days
101	S01	5,900	6,900	7	122	S01	22,200	23,200	7
102	S02	3,600	4,100	1	123	S05	21,000	22,000	3
103	S01	8,400	9,400	7	124	S05	10,500	11,500	3
104	S09	31,375	33,300	3	125	S08	5,750	7,000	3
105	S04	317,500	325,000	3	126	S08	5,750	7,000	3
106	S04	12,700	14,000	3	127	S06	3,100	3,600	3
107	S03	232,500	255,000	3	128	S06	4,500	5,000	3
108	S03	9,300	11,000	3	129	S06	2,300	3,000	3
109	S04	1,900	2,500	3	130	S05	450	600	3
110	S10	2,650	3,500	3	131	S10	10,000	11,000	3
111	S07	11,150	12,200	3	132	S12	39,400	42,000	3
112	S04	80,000	82,000	3	133	S05	2,400	3,500	3
113	S05	40,000	43,000	3	134	S01	4,250	5,000	7
114	S05	21,900	22,500	3	135	S05	6,750	7,500	3

Table 1. Price of materials (continued)

Material Code	Supplier Code	Main Supplier's Prices, IDR	Alternative Supplier's Prices, IDR	Lead Time, days	Material Code	Supplier Code	Main Supplier's Prices, IDR	Alternative Supplier's Prices, IDR	Lead Time, days
115	S11	11,875	13,000	3	136	S05	6,750	7,500	3
116	S06	29,700	31,700	3	137	S10	3,000	3,500	3
117	S06	14,000	16,000	3	138	S07	6,900	8,000	3
118	S00	1,000	1,500	3	139	S04	26,000	27,000	3
119	S06	8,000	9,000	3	140	S01	48,600	50,600	7
120	S06	5,800	6,800	3	141	S01	42,300	43,500	7
121	S01	40,000	45,000	7	142	S12	2,600	3,000	3

Table 2. Conversion value and proportion of materials

Material Code	Conversion	Proportion	Material Code	Conversion	Proportion	Material Code	Conversion	Proportion
101	0.0186	0.0004	115	0.0374	0.0020	129	0.0072	0.0018
102	0,0113	0.5526	116	0.0934	0.0138	130	0.0014	0.0008
103	0.0265	0.0143	117	0.0441	0.0046	131	0.0315	0.0033
104	0.0988	0.0113	118	0.0031	0.0001	132	0.1241	0.0064
105	1.0000	0.0004	119	0.0252	0.0063	133	0.0076	0.0013
106	0.0400	0.0117	120	0.0184	0.0039	134	0.0134	0.0034
107	0.7323	0.0734	121	0.1260	0.0054	135	0.0213	0.0078
108	0.0293	0.0548	122	0.0699	0.0063	136	0.0213	0.0067
109	0.0060	0.0023	123	0.0661	0.0454	137	0.0094	0.0036
110	0.0083	0.0018	124	0.0331	0.0042	138	0.0217	0.0260
111	0.0351	0.0252	125	0.0181	0.0023	139	0.0819	0.0000
112	0.2520	0.0355	126	0.0181	0.0031	140	0.1531	0.0095
113	0.1260	0.0256	127	0.0098	0.0012	141	0.1331	0.0130
114	0.0690	0.0049	128	0.0142	0.0020	142	0.0082	0.0014

Table 3. The aggregate demand data

Period, weeks	The Aggregate Demand	Period, weeks	The Aggregate Demand	Period, weeks	The Aggregate Demand
1	133	8	120	15	107
2	113	9	130	16	131
3	100	10	126	17	98
4	116	11	128	18	99
5	113	12	138	19	107
6	122	13	132	20	102
7	105	14	121	21	100

Table 4. The forecasting aggregate

Period, weeks	21	22	23	24
The Aggregate Demand	103	103	103	103

Table 5. The disaggregation of demand forecasting results

Material Code	Period, weeks				Material Code	Period, weeks			
	21	22	23	24		21	22	23	24
101	2	2	2	2	122	9	9	9	9
102	5006	5006	5006	5006	123	70	70	70	70
103	55	55	55	55	124	13	13	13	13
104	12	12	12	12	125	13	13	13	13
105	0.04	0.04	0.04	0.04	126	17	17	17	17
106	30	30	30	30	127	13	13	13	13
107	10	10	10	10	128	15	15	15	15

Table 5. The disaggregation of demand forecasting results (continued)

Material Code	Period, weeks				Material Code	Period, weeks			
	21	22	23	24		21	22	23	24
108	192	192	192	192	129	26	26	26	26
109	40	40	40	40	130	54	54	54	54
110	22	22	22	22	131	11	11	11	11
111	74	74	74	74	132	5	5	5	5
112	14.5	14.5	14.5	14.5	133	18	18	18	18
113	21	21	21	21	134	26	26	26	26
114	7	7	7	7	135	38	38	38	38
115	6	6	6	6	136	33	33	33	33
116	15	15	15	15	137	123	123	123	123
117	11	11	11	11	138	0.04	0.04	0.04	0.04
118	3	3	3	3	139	6	6	6	6
119	26	26	26	26	140	10	10	10	10
120	22	22	22	22	141	17	17	17	17
121	4	4	4	4	142	17	17	17	17

Table 6. Value of optimal Q, r, and ss

Material Code	Q	r	ss	Expected Total Cost	Material Code	Q	r	ss	Expected Total Cost
101	16	3	2	2,800	122	50	7	2	5,500
102	771	741	384	135,350	123	23	27	12	13,500
103	81	39	11	11,200	124	91	9	6	6,400
104	37	5	2	5,800	125	40	8	5	6,400
105	5	0.14	0.09	2,000	126	40	16	12	7,600
106	59	9	2	8,800	127	47	4	1	5,800
107	35	4	1	5,600	128	38	4	1	5,900
108	150	77	36	23,300	129	41	15	10	7,900
109	69	19	11	10,400	130	56	17	6	10,500
110	51	8	3	6,800	131	80	4	1	5,600
111	92	25	10	13,300	132	35	3	2	3,400
112	42	11	8	6,700	133	25	6	2	6,300
113	49	8	4	6,700	134	45	16	3	7,000
114	30	3	1	3,600	135	55	11	3	9,000
115	26	2	0.41	3,300	136	66	10	2	9,000
116	42	5	2	6,000	137	61	11	2	9,300
117	36	4	1	5,600	138	67	11	2	17,000
118	18	3	2	3,000	139	119	38	12	2,000
119	36	13	7	7,500	140	5	0.06	0.01	3,500
120	18	7	3	6,700	141	28	5	1	5,500
121	55	5	3	3,400	142	34	6	1	6,500
								Total cost	504,900

Figure 2. Home page
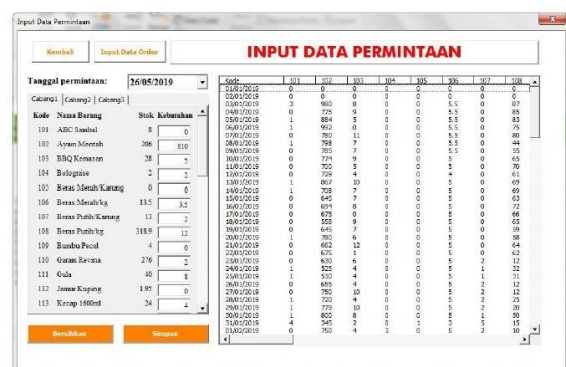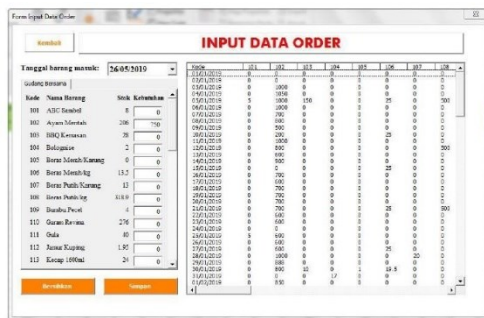

Figure 3. Input data demand

Figure 4. Input data order

Figure 5. Supplier data

Figure 6. Warehouse data

5. CONCLUSION

Inventory control of warehouse raw materials with Chickenpedia using the Continuous Review method is able to minimize stock outs so as to reduce losses. Losses in May 2021 at the joint warehouse reached Rp 1,702,300 because they ran out of stock 20 times so that 20 emergency orders had to be ordered. While the calculation using the Continuous Review method in the following month suffered a loss of 504,900. This means that this method is able to reduce losses of 1,197,400 or there are savings of up to 70.34%.

The development of an information system application helps company management in simplifying and accelerating the calculation of the optimal size of raw material orders and reorder points and at the same time being able to assist users in monitoring the stock of raw materials in the shared warehouse every day in real time based on the number of incoming and outgoing goods entered into the application.

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