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"AGRICULTURAL INNOVATION FOR SUSTAINABLE FARMING SYSTEM"

Organized by the Faculty of Animal and Agricultural Sciences Diponegoro University

Semarang - Indonesia, September 11th 2019

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Supply Chain Analysis of Chayote in Semarang Regency, Central Java Province, Indonesia

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Abstract

This study aim was to analyze the supply chain performance of chayote vegetable in Semarang, Central Java Province, Indonesia. The survey was conducted from April to July 2019. The analytical method used was descriptive quantitative, namely research by describing the conditions in the field from several individuals interviewed directly. Respondents were determined purposively on farmer respondents and snowball sampling for marketing institutions. The results showed that the supply chain of chayote vegetables at the research location had clear market targets however there were problems in optimizing supply chain targets, namely information on prices at the farm level, knowledge of good quality. The measurement of supply chain performance was categorized quite efficiently based on the marketing efficiency approach by calculating the income margin and the farmer 's share.

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Preface

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Preface
Chairperson of the 5nd International Seminar on Agribusiness 2019
Siwi Gayatri, Ph.D.

Assalamualaikum Wr. Wb.
Prof. Yos Johan Utama, Rector of Diponegoro University
Dr. Ir. Bambang Waluyo Hadi Eko Prasetiyono, Dean of Faculty of Animal and Agricultural Sciences, Diponegoro University
Distinguished guests, speakers, and all participants of the **5nd International Seminar on Agribusiness 2019**,
I am very happy to welcome you all at the **5nd International Seminar on Agribusiness 2019**. This seminar will be held today on 11th September 2019 at Grand Candi Hotel, Semarang.
This year's theme is "**Agricultural Innovation For Sustainable Farming System"**. The seminar has been honored by the attendance of 4 keynote speakers: Japan, Philippines, Thailand, and Indonesia.
The committee has seen a very big interest to the seminar and finally accepted 120 abstracts after careful selection, in which 100 papers will be presented in parallel session and 20 papers will be presented in the format of poster. The participants are from many universities, research agencies and government institutions across Indonesia. Selected papers from this seminar will be published in a reputable international proceeding IOP Conference Series: Earth and Environmental Sciences (EES). Therefore, we are proud to keep the high standard for the selection of abstract and full paper.
On behalf of the organizing committee, I would like to express my sincerest gratitude to keynote speakers, oral and poster presenters, distinguished guests, participants and also sponsors who have contributed to the success of this seminar. The committees are committed to give our best to make this seminar interesting and beneficial for all the participants. We are glad to accept your input to make the program better and please do not hesitate to reach us in case you need our assistance.
Last but not least, I thank all of the colleagues, organizing committee, student technical committee and all parties who have worked hard to make the **5nd International Seminar on Agribusiness 2019** possible.

Wassalamualaikum Wr. Wb.

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Dr. Sriroso Satmoko

Social and Economic Issues
Dr. Bambang Mulyatno
Dr. Siswanto I. Santoso

Other Issues Related to the Conference
Dr. Mukson
Teysar Adi Sarjana, Ph.D.

Table of contents

Volume 518

2020

Previous issue Next issue

The 5th International Seminar on Agribusiness 2019 "Agricultural Innovation for Sustainable Farming System" 11 September 2019, Semarang, Indonesia

Accepted papers received: 17 June 2020
Published online: 30 September 2020

Open all abstracts

Preface

OPEN ACCESS 011001
Preface
+ Open abstract View article PDF

OPEN ACCESS 011002
Peer review declaration
+ Open abstract View article PDF

Papers

OPEN ACCESS 012001
Implementation of Cluster Analysis and Artificial Neural Networks as an Alternative for Klassen Typology and LQ: Case of Coconut
Cungki Kusdarjito
+ Open abstract View article PDF

OPEN ACCESS 012002
Financial Feasibility Analysis of Jasmine Flower (*Jasminum Sambac L.*) Farming Business in Batang Regency, Central Java
Edy Prasetyo, Titik Ekowati, Mukson and Siwi Gayatri
+ Open abstract View article PDF

OPEN ACCESS 012003
Growth and yield of Mung bean (*Vigna radiata* L.) as affected by *Rhizobium* sp. bacteria inoculant and frequence of watering
Chintya Ramadhani, Eny Fuskhah and Endang Dwi Purbajanti
+ Open abstract View article PDF

OPEN ACCESS 012004

Relationship between teat dimensions and milking efficiency by hand milking on dairy cows in Temanggung Regency

Rudy Hartanto, Renita Listya Damayanti, Priyo Sambodho and Suranto Moch Sayuthi

+ Open abstract View article PDF

OPEN ACCESS 012005

Infertile egg powder as a potential feedstuff for starter broilers

Adi Ratriyanto, Wara Pratitis Sabar Suprayogi and Rizki Atikah

+ Open abstract View article PDF

OPEN ACCESS 012006

The Use of Tomato Waste Juice as an Antioxidant Source for Broiler Chickens

Hanny Indrat Wahyuni, Turrini Yudiarti, Endang Widiastuti, Sugiharto Sugiharto, Isroli Isroli and Tri Agus Sartono

+ Open abstract View article PDF

OPEN ACCESS 012007

Nitrogen Fertilizer and Microbial Inoculations Determined the Nutrient Uptake and Productivity of Soybean

Mercy Bientri Yunindanova, Trijono Djoko Sulistyo and Muhammad Daidi Jauhari

+ Open abstract View article PDF

OPEN ACCESS 012008

98-Enhance of Protein Efficiency Affected by Synbiotic Supplementation in the Diet of Broiler Chicken

Sri Setyaningrum, Dwi Sunarti, Vitus D. Yunianto and Luthfi D. Mahfudz

+ Open abstract View article PDF

OPEN ACCESS 012009

The Effect of Solvent Ratio and Precipitation Time on Isolation of Inulin from White Sweet Potato (*Ipomoea batatas* L.)

B Yudhistira, Siswanti and J.C.N Luwidharto

+ Open abstract View article PDF

OPEN ACCESS 012010

Drinking and feeding behavior of Ongole Crossbred Heifer with water-free access at MergoAndhini Makmur Farmer Group, Yogyakarta, Indonesia

Endang Baliarti, Andriyani Astuti, Arsy Wiandita and Astrid Listia Astrini

+ Open abstract View article PDF

OPEN ACCESS 012011

Artificial Insemination Program of Beef Cattle in Manokwari Regency

Arif Haryanto, Rudolf O. Faidiban and Andoyo Supriyantono

+ Open abstract View article PDF

Farming productivity, farmers' perception and satisfaction to agricultural extension worker in Garut Regency 012050

Tri Ratna Saridewi, WasissaTiti Ilhami and Efri Junaidi

+ Open abstract View article PDF

OPEN ACCESS 012051

Stakeholder Collaboration in The Development of Tourism Villages (Studies on Kandri Tourism Village, Gunungpati Subdistrict, Semarang City)

Indah Susilowati, Luthfi Ibnu Tsani, AG Edy Yusuf and Hadi Sasana

+ Open abstract View article PDF

OPEN ACCESS 012052

Supply Chain Analysis of Chayote in Semarang Regency, Central Java Province, Indonesia

Wiludjeng Roessali, Endang Dwi Purbayanti, Tutik Dalmiyatun and Suryani Nurfadillah

+ Open abstract View article PDF

OPEN ACCESS 012053

Determination of rice expiration time based on microbiological contaminant

Mulyana Hadipernata, Nikmatul Hidayah and Sigit Nugraha

+ Open abstract View article PDF

OPEN ACCESS 012054

Determining strategy of beef cattle development in Karanganyar Regency, Central Java, Indonesia

Sutrisno Hadi Purnomo, Ayu Intan Sari, Shanti Emawati and Endang Tri Rahayu

+ Open abstract View article PDF

OPEN ACCESS 012055

The Effect of Gamma Co 60 Radiation on Soybean *(Glycine max(L.) Merr)* Shade Tolerants

Lilik Harsanti, Anisyah, Parno and Tarmizi

+ Open abstract View article PDF

OPEN ACCESS 012056

In Vitro Ruminal VFA Concentrations from Rice Straw and Sugarcane Bagase Based Diets with Different NFC Sources

Joelal Achmadi, Eko Pangestu, Surahmanto, Agung Subrata and M. Ainsyar Harahap

+ Open abstract View article PDF

OPEN ACCESS 012057

The Potential of New High-Yielding Varieties Development in Tegal Regency

Anggi Sahru Romdon, Komalawati and Harwanto

+ Open abstract View article PDF

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Journal home

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Artificial Insemination Program of Beef Cattle in Manokwari Regency

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Abstract. Manokwari is a potential regency to be developed as a center of beef cattle production. One of the activities that have been implemented to increase the productivity of beef cattle is the technology of artificial insemination (AI). The study aims were to determine the success of AI in beef cattle and to evaluate the factors which determine success of AI in Manokwari District. The research was carried out in some districts of AI implementation namely Prafi District, Masni District and Sidey District. The research method was descriptive. The number of respondents were 75 farmers who join in AI program and 5 inseminators. The results of the study indicated that factors determine of the success of AI were thawing, inseminator experience, the number of calf birth, education level of the farmers, the time of AI, the length of work and the number of training. Indicators of artificial insemination were as follow: service per conception (S/C) was 1.8, calving interval (CI) was 12.9 months and calving rate (CR) was 47.11%. Those indicators showed that AI program in Manokwari District was successful.

1. Introduction

Manokwari is one of the districts that has a large population of beef cattle. It has the potential to be developed as a center for cattle production. One of the activities that have been carried out by the local Government is to increase the productivity of beef cattle through Artificial Insemination (AI) specifically for Bali cattle. The AI program in Bali cattle in this area has been implemented since 2000.

There are several areas targeted for the implementation of the AI program in Manokwari, namely Prafi district, Masni district and Sidey district, those three districts have a larger number of beef cattle compare to other districts. The number of beef cattle in Prafi, Masni and Sidey district ia about 3,595; 3,560 and 816, respectively. Total number of beef cattle in Manokwari is about 9,272 (Manokwari in figures,2015) [1].

Although AI technology has been implemented for quite a long time in the regency, the success of AI is still very varied and tends to be low. According to Toelihere (1981) [2], the success of the AI program was influenced by several things including: dams, inseminator skills in depositing semen, timeliness of AI, heat

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Drinking and feeding behavior of Ongole Crossbred Heifer with water-free access at MergoAndhini Makmur Farmer Group, Yogyakarta, Indonesia

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Abstract. This study was aimed to determine the effect of the water-free access on drinking and feeding behavior of Ongole Crossbreed (OC) heifer in the Mergo Andhini Makmur farmer group in Bolu Village, Yogyakarta, Indonesia. Ten OC heifers with an average body weight of 280 kg divided into two treatment groups. The first treatment (P0) gave water according to the farmer used to give (control group), while the second group (P1) with water-free access. The feed given was forage and concentrate. Feeding and drinking behavior which were feeding duration, frequency of eating, drinking, urination, and defecation during 7 consecutive days were collected then analyzed by One Way ANOVA to see if there were differences between two group of water accessed. The results showed that the frequency of drinking of free access water group was higher ($P<0.05$) compared to the control group (5.9 ± 2.6 vs 1.00 ± 0.00 times/day), while duration and frequency of eating, frequency of urination, defecation and amount of defecation and urination were not significantly different ($P>0.05$). The results of this study concluded that Ongole Crossbred heifer needs water-free access than those restricted ones for better performances.

1. Introduction

The government launched a program to conserve and increase the population of Ongole Crossbred (OC) cattle through the establishment of a Village Breeding Center (VBC). One of the farmer group chosen as VBC on D.I. Yogyakarta was the Mergo Andhini Makmur (MAM). However, calf harvest rates and cows' performance in MAM are still low. Bad performance of the cows could be caused by lack of water intake. Lack of water intake is one of the causes of decreased reproductive efficiency because it is always followed by reproductive disorders in cows and bulls.

Water was an important nutrient and is involved in every metabolism of body functions [1]. Alamer [2] states that the provision of water is important in the needs of water in the body and the restricted water can be a factor that affects the physiology and productivity of livestock. The source of water for ruminant animals can be fulfilled by drinking water consumed, water contained in feed and metabolic water. Many farmers do not pay attention to the provision of water to their livestock. Some farmers assume that the need for water has been fulfilled by the water in the forage feed.

Behavior is any animal activity that occurs as a result of certain stimulants that can originate from outside or from inside the animal's own body as a reaction to its environment. Examples of environmental influences that can affect behavior are water restrictions [3]. The direct effect of water restrictions is a reduction in food consumption and thus also a reduction in growth and food efficiency [4]. Restrictions on the provision of water can cause a reduction in feed [5]. Several previous studies

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Effectiveness of Acidifier in Broiler Fed Diet Double Step-Down Protein

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Abstract. Research' aim was to determine the effectiveness of acidifiers in broiler fed double step-down protein. A total of 168 birds (84 males and 84 females, initial BW was 186.3 ± 0.68 g) were raised for eight weeks. The first 7 days, chickens were fed on commercial feed. Experimental diets were composed to contain protein and energy of 21.41% and 2.856.91 kcal/kg, for starter control diet, and of 19.15% and 2884.12 kcal/kg for starter dietary protein step-down similar to finisher control diet, and of 17.37% and 2882.13 kcal/kg for finisher protein step-down diet, respectively. The study was arranged in a completely randomized design with seven treatments and four replications (6 birds each). Parameters measured were feed and protein consumptions, protein digestibility, body weight gain, feed conversion, and income over feed cost. Data were analysed by variance and to Duncan multiple range test. The results showed that dietary inclusion of acidifiers lowered feed and protein consumptions, but it increased body weight and income over feed cost as well as improved feed conversion. In conclusion, acidifiers inclusion, especially at the level of 0.8% synthetic citric acid, in the double step-down protein can increase efficiently broiler performance and improves income over feed cost.

1. Introduction

To support the fast growth rate of broiler chickens, the provision of nutrients, especially protein, is important. However, the dietary protein content is positively related to the price of feed, which implies that the higher dietary protein content, the more expensive price of the feed. It is known that feed cost for broiler chickens contributes up to 70% of the total production costs. In order to reduce the cost of production, it is, therefore, necessary to manipulate the feed, for instance by reducing the level of protein content (step-down). Lowering dietary protein content at starter period decreased feed consumption which brought about the improvement of feed conversion ratio (FCR) compared to controls [1]. Decreased levels of protein feed lower than the standard can be done via two ways. The first, a decrease in protein feed at the starter alone known as single-phase step-down protein, and the second, the decrease in feed protein in both starter and finisher periods called as double step-down protein. However, in most cases, decreased protein level is often accompanied by the impairment of broiler performances. In this case, decreasing dietary protein content should be followed by the improvement of the absorption of protein in order to fulfil the protein needs of broiler for growth. Previuos studies demonstrated that the improvement

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The Effect of Solvent Ratio and Precipitation Time on Isolation of Inulin from White Sweet Potato (*Ipomoea batatas* L.)

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Abstract. White sweet potato has the potential as a source of inulin and is largely abundant in Indonesia. The solvent ratio and precipitation time in ethanol solvent can increase yield produced in the inulin isolation process. This research aimed to determine the effect of different solvent ratios and precipitation times on inulin yield in the extraction-isolation process and as well to know the physical and chemical characteristics of white sweet potato inulin. The stages of the study consisted of determining the total sugar content and sugar reduction, extraction, isolation, physical and chemical characterization. This research used Factorial Completely Randomized Design (RALF) with two factors, different solvent ratio were 1:1, 1:2, and 1:3 with precipitation time for 6, 12, and 18 hours. Data were analyzed used General Linier. The analysis was followed by DMRT (α = 0,05). The results showed that the ratio of 1:2 and the precipitation time of 12 hours produced the best inulin yield of 7.72%. It had an effect on the physical characteristics of inulin that were produced, namely color, solubility, water absorption and water content. While the other characteristics in the form of ash content were not significantly different in ratio and precipitation time.

1. Introduction

Inulin is a functional compound that can provide physiological functions and beneficial for health. Inulin belongs to polysaccharides group consisting of a straight D – Fructose chain with one unit of glucose at each end [1]. Inulin has benefits as prebiotic and can be added to fat substitute food products [2]. Inulin is found in many roots and stems of tubers. Inulin production in Indonesia itself is still limited to the commercial tubers of Chicory and Jerusalem Artichoke. There have been many studies on the development of inulin in various foods such as dahlia tubers, various kinds of yams, *bengkoang*, shallots, and dandelion plant roots. One of the plants in Indonesia that has the potential to contain inulin and its abundant availability is sweet potato. Previous research by Afriani (2016), she conducted a research about inulin testing on several sweet potato varieties, namely white, purple and yellow sweet potatoes [3]. However, in those studies, extracted inulin was only seen physically outside and has not been tested for the presence of inulin based on functional groups. In addition, there has been no further research regarding the characterization of inulin derived from sweet potatoes.

In this study, further research on inulin of white sweet potato was conducted in which research by Afriani (2016) has not been carried out on isolation or characterization of inulin. The aimed of the study was carried out through several stages including extraction, isolation, and characterization using solvents with different ratios and precipitation times. The characterization of inulin was performed using FTIR to determine the presence of inulin based on functional groups.