

Agribusiness System of Chrysanthemum Cut Flowers at PT. Bunga Indah Malino

Khaerunnisa¹, Didi Rukmana², Jusni³

^{1, 2, 3} Faculty of Agriculture, Hasanuddin University, St. Perintis Kemerdekaan, Makassar, Indonesia

Abstract: *Chrysanthemum cut flower agribusiness managed by PT. Bunga Indah Malino illustrates the economic potential of the cultivation of large ornamental plants. This study aims to examine the condition of chrysanthemum agribusiness system PT. Bunga Indah Malino and patterns of inter-linkage between these subsystems. This research uses informant with snowball sampling technique so that the analytical method used is descriptive qualitative. Based on the study result, chrysanthemum agribusiness subsystem at Bunga Indah Malino Interest in principle is the same as other agribusiness subsystem consisting of four subsystems namely upstream subsystem, on farm subsystem, downstream subsystem and supporting subsystem. But what distinguishes is the agribusiness process that runs from upstream to downstream. These four subsystems are well under way so that the ^{products} produced are export-qualified and become the only floriculture entrepreneur in South Sulawesi Which is GAP (Good Agricultural Practices) certified.*

Keywords: Agribusiness, Cut Flowers, Chrysanthemum

1. Introduction

The floriculture industry or the ornamental plant industry currently has considerable prospects for agribusiness development in Indonesia which is characterized by the growing number of production produced annually (Direktorat Jenderal Produksi Hortikultura, 2016). One of the cut flower products that are quite popular and well known by the people both domestically and abroad are chrysanthemum plants. In the world, chrysanthemum is a kind of much-needed flower. According to Budiarto et al (2006), until now the supply of chrysanthemum is not sufficient to meet the world demand that tends to increase. The existence of various advantages and benefits possessed by chrysanthemum flowers make chrysanthemum farming efforts increasingly showing improvement (Rimando 2001). The market of the business has also experienced rapid growth both domestically and abroad. Consumers are also increasingly diverse as restaurants, decorators, hotels, florists, event organizers and household consumers. The existence of small business opportunity of chrysanthemum cut flowers agribusiness is what causes more and more entrepreneurs engaged in the field (Hortin Programme, 2015).

One of the companies engaged in chrysanthemum cut flowers agribusiness is PT. Bunga Indah Malino located in Gowa District, South Sulawesi Province. The company has been in the process of cultivating chrysanthemum flowers since 2015 and has managed to export to the country of Japan as much as 6,000 stalks per week. Chrysanthemum development center of PT. Bunga Indah Malino has a strategic role to drive the economic activities based on ornamental plants that have an impact on improving the welfare of the community. Chrysanthemum production activity was initially directed to supply the market in eastern Indonesia that has been fulfilling the needs of chrysanthemum flower is supplied from the island of Java with a high enough cost so that the development of chrysanthemum farming business in Malino is expected to provide cut flowers at a price more cheap. But in the end, chrysanthemum marketing belongs to PT. Bunga Indah

Malino penetrate the world's attention, especially Japan to export.

In line with the increased production and quality of chrysanthemum flower as a positive impact of the application of technology and other inputs, various problems in agribusiness activities related to the production process, post harvest, storage, transportation and marketing. (Balithi, 2016). Therefore, this research is important to examine the agribusiness system of chrysanthemum cut flowers from upstream to downstream

2. Review of Literature

a) Concept Of Agribusiness

Conceptually the agribusiness system can be defined as all activities, ranging from procurement and distribution of inputs to marketing of products produced by farming and agroindustry, which are interconnected with each other. Thus the agribusiness system, is a system consisting of various subsystems namely upstream agribusiness subsystem, on farm agribusiness subsystem, downstream agribusiness subsystem and supporting subsystem (Adjid, 2001).

b) Floriculture Agribusiness

Floriculture agribusiness is the whole business activity associated with the flowers. The prospect of floriculture agribusiness in Indonesia can be seen from the demand side (market potential) or from the supply side (resource potential). In terms of resource potential, this floriculture agribusiness prospect is shown, among others, the following. First, Indonesia is a tropical region that has tropical agro-climates (lowland areas) and subtropical-like agro-climate (upland areas). With these two agro-climates, almost all of the world's floriculture commodity agribusinesses can be developed in Indonesia. Second, Indonesia is a country with a considerable diversity of floriculture resources. Such diversity makes it possible to meet almost all segments of the international floriculture market. Third, technology and human resources for floriculture development are relatively available. Similarly, human resources, diversity of human resources is not an obstacle to agribusiness development but

potential because every qualification of labor has a niche on the agribusiness florikultura (Saragih, 2009).

c) Cribisanthemum Cut Flowers

Chrysanthemum or also known as the seruni flowers, is an ornamental plant that has a high economic value and potential to be developed commercially. This plant is estimated to originate from East Asia precisely mainland China. Based on Widyawan (2004) Chrysanthemum with Latin name Chrysanthemum sp originated from Chinese plains, including into family Asteraceae or Compositae. Based on Budiarto et al (2006) chrysanthemum is generally cultivated and grow well in medium to high land in the range of 650 to 1,200 m asl. In its natural habitat, chrysanthemum is a plant that is checking and can grow to reach a height of 30 - 200 cm. Based on its life cycle, chrysanthemes are divided into 2 types, namely chrysanthemum (hardy annual) and chrysanthemum annual (hardly perennial). The United State National Chrysanthemum Society establishes a chrysanthemum classification system. Based on the type of interest are: single (single), anemone, pompon, decorative, and large flowers (standard) (Rimando 2001).

3. Materials and Methods

This research was conducted at PT. Beautiful Flower Malino in Pattapang Village, District of Tinggimoncong, Gowa Regency, South Sulawesi Province. Selection of this location is done intentionally (purposive) with the consideration that PT. Bunga Indah Malino is a chrysanthemum flower agribusiness company that can boost the economy of South Sulawesi with export quality. This research was conducted in March-July 2017.

In qualitative research does not use the term population, but by spardley in Sugiono (2010) is called "social situation" or social situation which consists of three elements: place, actor and activity interact synergistically. Informant determination was done by snowball sampling method. Technique of snowball informant retrieval implies increasing number of informant along with time of observation. Researchers depart from an informant who is considered to have more knowledge about the object of research to initiate data collection. To this informant the researcher asks who else next (or whomever) the person should be interviewed, then the researcher switches to the next informant as suggested by the first informant, and so on until the researchers feel confident that the required data has been obtained sufficiently to answer the research problem .

4. Results

a) Upstream Subsystem Of Chrysanthemum Cut Flowers Agribusiness

Upstream agribusiness subsystems include the provision of agricultural production facilities, including seeds, fertilizers, pesticides and agricultural production equipment.

1) Procurement of Chrysanthemum Flower Seeds

In the process of procuring chrysanthemum seedlings, PT. Bunga Indah Malino supplies its seeds through UPTD Balai Benih Hortikultura (UPTD BBTH) South Sulawesi

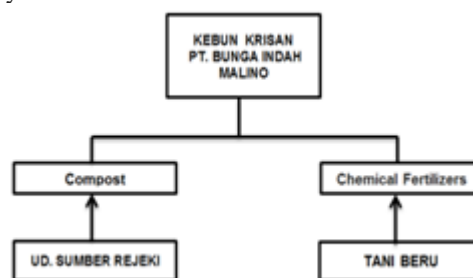
Province and Balai Penelitian Tanaman Hias (Balithi) Cipanas. Both suppliers are selected by the company because it has been tested in quality. The company supplies 7.500 stems/week from BALITHI Cipanas and 7.000 stems/week from UPTD BBTH South Sulawesi. Seeds supplied from BALITHI Cipanas are prepared for the international market due to their quality that is able to meet the demand while the seeds supplied from UPTD BBTH South Sulawesi are prepared for the local market. Both suppliers have established cooperation with PT. Bunga Indah Malino. From this partnership, the company obtained a 10% seed price discount from the normal price. Ie 1,000-1,400 /stems depending on the type of chrysanthemum cut flowers ordered. The following pattern of seed procurement PT Bunga Indah Malino:



Pattern Of Seed Procurement Chrysanthemum Cut Flowers PT. Bunga Indah Malino

2) Procurement Of Fertilizer

Procurement of fertilizer for chrysanthemum flowers held maximum once in a month depending on the needs of the plant. The fertilizer used is compost and chemical fertilizer. The fertilizer is obtained from two suppliers namely compost fertilizer obtained from "UD. Sumber Rejeki Malino" while chemical fertilizer is obtained from "Tani Beru Farmer's Store. Compost fertilizer purchased by the company through partners is not directly used but still through several processes. First, the purchased composted fertilizer is spread over thick tarpaulin and then mixed with 2: 1 (2 sacks of compost and 1 sack of fuel husk weighing 20 kg each). Second, the chaff and compost are mixed evenly. Third, dissolve the molasses 100 ml into 15 liters of water, stir and then spray molasses into the compost fertilizer that has been mixed with the previous fuel husk by using a sprayer for the results evenly. Fourth, put the fertilizer into the burlap sack and wait until 1 week of fermentation to be used. The type of chemical fertilizer used is Urea, NPK and SP36. Both of these fertilizers are directly distributed to the company through partners with freight costs borne by the company.



Fertilizer procurement pattern Chrysanthemum Cut Flowers PT. Bunga Indah Malino

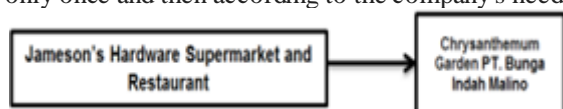
3) Procurement of Pesticides

Procurement of pesticides is done by the company in accordance with the needs of the plant. Procurement of pesticides is mostly done in the rainy season because the plants are vulnerable to pests and diseases. The type of pesticide used is as follows:

No	Pesticides	Target
1	Dithane	Aphids, Leaf Spot, Rotting Stem
2	Marshal 10 G	Nematodes
3	Gromoxone	Grass
4	Pegasus	Mite
5	Decis	Thrips
6	Trigon	Caterpillar
7	Hatake	Mushrooms And Bacteria
8	Score	Rust Leaf
9	Previcur	Rust Leaf, Rotten Stem
10	Amistartop	Rust And Rotting Leaves

4) Procurement of tools and machinery

The procurement of company tools and machinery is done only once since the company stands. Therefore, the company does not cooperate with certain stores or companies in terms of equipment and machinery procurement. The equipment and machinery are obtained from "Jameson's Hardware Supermarket and Restaurant". The company does not cooperate specifically with the supplier company considering the procurement of equipment and machinery only once and then according to the company's needs.



Pattern of Procurement of Tools and
Machines Chrysanthemum Cut Flowers PT. Bunga Indah
Malino

b) On Farm Subsystem Of Chrysanthemum Cut Flowers Agribusiness

Subsistem On Farm is associated with production and cultivation activities. The activity that is done is the preparation of mother stock seed by means of seed propagation such as grafting, cuttings, and grafting. Furthermore, the soil processing is done so that the structure of the soil and drainage better. Cultivation process is one of the most important part because this process can determine the production of chrysanthemum flowers. If the cultivation process is done in accordance with the procedure, then the production can be qualified. Here is the process of cultivation of chrysanthemum flowers PT Bunga Indah Malino:

1) Land Preparation

Preparation activities for the production of chrysanthemum cut flowers include land preparation, land sterilization, making of beds and ditches, installation of crop support facilities and weed control before planting.

2) Seeding

Chrysanthemum cut flowers that have been obtained from one of the suppliers namely BalithiCipanas is breeding seedlings through tissue culture. Therefore, it still needs a seedbed stage. The seedlings are first sorted and rooted at the nursery table in the nursery for 2 weeks and can be

planted immediately in the chrysanthemum production field. Chrysanthemum seedling activities in the green house include preparation of nursery media, maintenance and harvesting of seedlings.

3) Selection

Selection of seedlings done before planting. This is done to avoid premature deterioration of plants caused by diseases carried by plants prior to planting. Supply of seeds from partners is not always clean of 100% disease. This happens because the seed distribution process is quite far from the location of chrysanthemum garden. That disease usually appear before the seedlings are planted leaf rust. If the leaf rust disease sufferers more than 2 leaves, then the seedlings can not be planted and can be complained back to the supplier partner.

4) Planting

Seedlings for the production of chrysanthemum flower using rooted or \pm 2 weeks old tissue culture material from the nursery room. Cropping pattern first made before the planting by counting the number of plant population in the tunnel that is as much as 6,000 plants/beds. Spacing used is following the net box with a size of 10 cm x 10 cm with the pattern of planting 20 seeds per row or each hole planted with one seed, so that in 1 m² there are 100 seeds. Planting chrysanthemum seedlings is done regularly every Tuesday, Thursday, and Friday in the morning when the air temperature is not too hot in order to reduce stress on the seeds. Planting seeds should not be too deep because it can be affected by stem rot and when holding the seeds do not get too pressed because the base of the stem will bruise and susceptible.

5) Maintenance

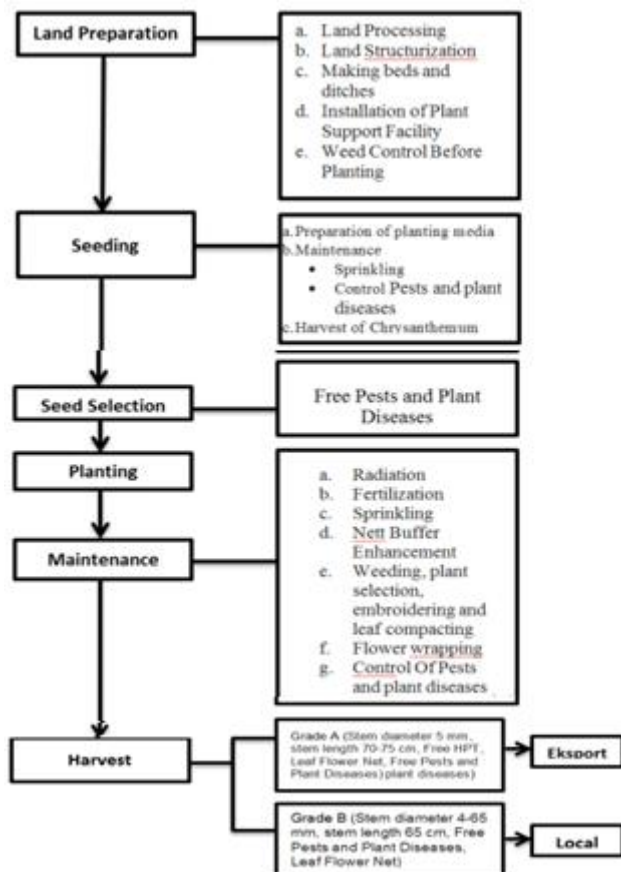
The maintenance of chrysanthemum flower in the company involves irradiation, fertilization, watering, net buffer enhancement, weeding, plant selection, embroidery, leaf collecting, pekiwilan and disposal of flower buds, flower wrapping and pest control and plant diseases.

6) Harvest

The company harvests crops only once and once planting new crops. The company determines the harvest with the calendar calculation is the estimated harvest by calculating the age of the plant since planting in the field. Determination of harvest with calendar calculation can only determine the harvesting week, while for the day of harvesting done by visual means by looking at the level of flowering. Age of chrysanthemum flower in the company about 12-15 weeks planting time. Criteria for harvesting chrysanthemum cut flowers on standard type chrysanthemum flowers at least 1 circle of flower crown has bloom 40-60% or half bloom flowers. In chrysanthemum type spray the whole flower buds have been in full bloom, if the demand of flowers is medium. Soaring and flowers are not yet in full bloom then the harvest criteria for the spray type that is at least 4 flowers has bloom 75-80% for the local market. Unlike the case with a special harvest for the international market. Chrysanthemum harvest for international market demand market is 20% flowering rate.

The way of harvesting the flowers of chrysanthemum is to select the plants that are ready to harvest, which is firstly selected flowers that have met the high criteria of the flower tree is about 60-65 cm for the local market and 65-75 cm for the international market. The next activity is the selection of flowers against pests and diseases. Harvesting of chrysanthemum cut flowers is done in two ways: remove the chrysanthemum tree until its roots or cut the flower stalk 6-8 cm from the ground by using the harvesting scissors, then merompes leaf on the third of the flower stalk and collected on the place previously provided.

Parameter	Grade		Unit
	A	B	
Stem diameter	5	4-4,5	mm
Florescence		70	%
Freshness of Flowers	Fresh	Fresh	
Long Stalk	70-75	65	Cm
Plant pests and diseases	Free	Free	
Flower leaf	Clean	Clean	



c) Downstream Subsystem Of Chrysanthemum Cut Flowers Agribusiness

Post-harvest handling of interest is an activity that provides the treatment of interest after the interest is harvested until the interest is received by the consumer. The purpose of post-harvest handling is to maintain the integrity of interest so that the quality of interest received by consumers remains good. The activities of chrysanthemum downstream subsystem include sorting, packing, storage and flower delivery to consumers.

1) Sorting

Growth of plants in each plant is not always uniform, including from the length of the flower stalk, the rate of flowering, stem diameter, and the number of flowers. The uniformity of growth causes the company to set the quality classes of harvest A and B. The company sets itself the standard quality grade for chrysanthemum cut flowers as follows:

2) Packaging

Chrysanthemum packaging in the company is divided into 2 methods or ways. First, the grade A flower to be exported is packaged by insert into a specially designed hollow plastic and then inserted into cardboard that has lable. The cardboard is tied with a rope with the help of the machine. Each cardboard consists of 8 bunches of cut flowers with the number of 10 sticks per bundle. So, the amount of chrysanthemum / cardboard flower is as much as 80. In the outer appearance of the cardboard there is a lable that contains about the color of flowers, the type of flowers, the origin of the green house flower cultivation, the number of flowers and cardboard numbers. While the grade B flowers are not through packaging. The grade B interest is only stored in a bucket that has been filled with clean water with a height of about 5 cm.

3) Storage

Chrysanthemum flower storage in the company is only done for grade B which will be marketed locally. Usually the storage is done for one day to wait for the company's pickup pickup car that is usually used for other purposes as well and local consumer demand to deliver in the morning. However, it differs from grade A flower. The grade A flower is not stored because it is directly exported to Japan after the quarantine and packaging process has been completed. Storage is done in post-harvest room.

4) Channel Pattern

Some market participants play a role in the distribution of chrysanthemum cut flowers from producers to consumers. PT. Beautiful Flowers Malino has three patterns of product distribution:

- Channel Pattern I
PT. Bunga Indah Malino → D 'Market (Osaka, Japan) → Consumer
- Channel Pattern II
PT. Bunga Indah Malino and Farmer Women's Group AmpeMabaji and Adelia → Florist → Consumer
- Channel Pattern III
PT. Bunga Indah Malino → Consumer

In channel pattern I, the Company distributes its products to "D 'Market" which is one of the florist companies in Osaka, Japan. Then the florist directly sells its products to consumers. The process before the company export their product is all chrysanthemum cut flowers quarantined by the Agricultural Quarantine Agency. In the quarantine process, the company has prepared the tools used for quarantine so that the company does not need to bring the product to the Office of the Agricultural Quarantine Agency but the product is directly quarantined in the company with the presence or examination by the Agricultural Quarantine

Agency. After that, the product is directly delivered to Sultan Hasanuddin International Airport by using Garuda cargo.

5. Discussion

a) Characteristics of The Company

PT. Bunga Indah Malino was established on December 12, 2013. The company has the intent and purpose to do business in agriculture, industry, services, trade, land and sea transportation, printing, workshop and development. PT. Bunga Indah Malino was inaugurated on September 25, 2014 by Mufida Jusuf Kalla who was accompanied by Iriana Joko Widodo. PT Bunga Indah Malino is a company that initiated the application of modern chrysanthemum cultivation techniques with a land area of ± 3.5 Ha. Land area of 3 Ha is used for the production of ornamental plants and 0.5 Ha is used as orchid plant production area. The vision of the PT. Bunga Indah Malino is as follows: "To create fresh flowers as decoration, beautify the environment and reduce the use of plastic flowers. Fresh flowers production is expected to have a direct and indirect impact on the regional economy, especially in Malino and South Sulawesi in general".

PT. Bunga Indah Malino is the first exporter company in South Sulawesi that has been granted a plant quarantine plant permit so that it can carry out quarantine action outside the expense or in-line inspection. With this system, chrysanthemum export acceleration can be encouraged to penetrate foreign markets. Until now, Bunga Indah Malino is the only chrysanthemum company in Indonesia that exports chrysanthemum flower to Japan. PT. Bunga Indah Malino exports its prime exports to Osaka, Japan on February 12, 2016. The first export of chrysanthemum flowers is 6,000 stalks and routine to export 6,000 stalks per week although buyer demand is 24,000 stalks per week. Buyer Osaka, Japan was initially interested in chrysanthemum PT. Flower Beautiful Malino at the International Flowers Expo in Osaka. They are interested to cooperate because the quality of chrysanthemum is pretty good.

b) Characteristics of Informant

People who are used as internal informants of the company is a person who is directly involved in the process of cut flowers agribusiness chrysanthemum. From the informant, included information about data about Company Profile, data on procurement of cutting production facilities, production process, harvest and post harvest until distribution of goods to consumer.

Informal internal company that is Mr. Ahmad Zulqawimiyah as Director of PT. Bunga Indah Malino, Sumarlin served as administrative and general staff and Mr. Samsul Mamma as Chief of Chrysanthemum Garden of Buluballea, Gowa, South Sulawesi Province. Each informant obtained different information. Information about company profile and cooperation with other companies was obtained from Mr. Ahmad Zulqawimiyah while information on marketing of products was obtained from Sumarlin as administrative and general staff while also handling local market and export of chrysanthemum flower. Meanwhile, information about chrysanthemums ranging from the procurement of production facilities, production process, harvest to post-

harvest obtained from Mr. Samsul Mamma as Chief KebunKrisan PT. Beautiful Flowers Malino. While the people who serve as an external informant of the company is a person who is involved in the process of chrysanthemum cut flowers around PT. Bunga Indah Malino. An external informant company consisting of two people namely Darni as head of tissue culture laboratory UPTD BBTH South Sulawesi channeling chrysanthemum cut flowers from the propagation through tissue culture. From these informants obtained information about the quality of seeds from the laboratory that will be distributed to the company and the form of cooperation with the company PT. Bunga Indah Malino. Furthermore, AsihIffah as a member of the Adelia women farmer group in cooperation with the company obtained information about the system of cooperation and operational standards of the company to be followed by farmers who want to cooperate and form of cooperation offered by the company.

6. Conclusion

Agribusiness system of chrysanthemum cut flowers on PT. Bunga Indah Malino Interest in principle is the same as other agribusiness subsystem consisting of four subsystems namely upstream subsystem, on farm subsystem, downstream subsystem and supporting subsystem. But the difference is the agribusiness process that runs from upstream to downstream. These four subsystems are well under way so that the products produced are export-qualified and become the only floriculture entrepreneur in South Sulawesi which is GAP (Good Agricultural Practices) certified.

References

- [1] DirektoratJendralBinaProduksiHortikultura. 2016. *PerkembanganProduksiKomoditasFlorikulturaTahun 2011-2015*.
- [2] Budiartoet al. 2006. *Florikultura: BudidayaBungaKrisanPotong*. PusatPenelitiandanPengembanganHortikultura. (Online) (<http://yogya.litbang.pertanian.go.id>, diakses pada tanggal 1 Februari 2017).
- [3] Rimando TJ. 2003. *Ornamental Horticulture A Little Giant in the Tropics*. Filipina: SEAMEO SEARCA and UPLB, (Online) (<http://olam.ed.asu.edu>, diakses 25 Januari 2017).
- [4] HortinProgramme. 2015. *ProduksiTanamanKrisan*. DirektoratJenderalTanamanHortikultura.
- [5] Balithi. (2016). *KunjunganLapangke PT. Bunga Indah Malino*. (Online) (www.tribunnews.com, diakses pada 5 Januari 2017).
- [6] Adjid A. 2001. *Agribisnis dan Aplikasinya*. Yayasan Pengembangan Sinar Tani. Jakarta.
- [7] Saragih B. 2001. *Peranan Public Relation dalam Pembangunan Pertanian*. Di Dalam Sadikin S, editor. *Pembangunan Sistem Agribisnis di Indonesia dan Peranan Public Relation*. Program Pascasarjana PS. KMP-IPB. Bogor.
- [8] Widyawan. 2004. *BungaPotong : Tinjauan Literatur*. PDI. Jakarta.
- [9] Sugiono. (2010).

Author Profile



Khaerunnisa was born in Sungguminasa, South Sulawesi, Indonesia on August 3rd, 1992. She got her bachelor degree (S.P) in 2014 at faculty of Agriculture of Hasanuddin University, Indonesia.

In 2015 up to present, she continued her study to get her master degree on agribusiness Study Program at Faculty of agriculture at Hasanuddin University, Makassar, Indonesia and awarded by LPDP Scholarship. This paper is a part of her thesis which is supervised by Prof. Dr. Ir. Didi Rukmana and Dr. Jusni S.E., M.Si