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Weed Community Structure in Patia Village Rice Fields Patia Sub-District, Pandeglang Regency

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Abstract

Rice is a very important type of food crop because it is a staple food source. Crop losses at the farmer level due to competition with weeds reach 10-1.5%. This study aims to determine the structure of rice weed communities in rice fields in Patia Village, Patia District, and Pandeglang Regency. The research method uses an observation method with the sampling technique used as a random method. The plot used was 2 m x 2 m. Weed sampling was carried out by recording the types of weed types and counting the number of individuals of each species. Measurements of environmental factors such as temperature, humidity, pH, and light intensity were measured. The data parameters measured include the Shannon-Wiener diversity index (H'), evenness index (J'), dominance index (D), wealth index (S), and abundance of rice weed species. The results of the study were that the types of rice weeds found in the rice fields of Patia Village, District, and Patia, Pandeglang Regency, namely *Ludwigia octovalvis* (Jacq) Raven, *Commanded cylindrica*L. Beauv, *Spigelia anthelmia*, *Ageratum conyzoides*, *Spihemoclea zeylanica*, *Altemanthera sessillis*, *Eclipta prostate*, *Cypress deformed* L., *Digitaria* sp. and *Mimosa chaste* L. The structure of the weed community in the rice fields of Patia Village, Patia District, Pandeglang Regency is the Shannon-Wiener Diversity Index (H') of 1.94; Evenness Index (J') of 0.884; Dominance Index (D) of 0.15.

Keywords: weeds; competition; rice; productivity; community structure.

INTRODUCTION

Rice (*oryza sativa* L.) is an important crop commodity because it is the staple food of the population in Indonesia and plays an important role in economic and social stability in Indonesia. The population of Indonesia reached 270.20 million people with rice production in 2020 reaching 31.33 million tons (BPS, 2021). Efforts to support the rice self-sufficiency program and meet rice needs need to maintain the stability of rice production. Rice production in Indonesia can decline due to several factors, including drought, land narrowing, pest disturbance and the influence of weeds (Windari et al., 2021).

Weeds in rice plants are one of the problems that greatly affect productivity (Miranda *et al* 2011). The presence of weeds on rice plants will cause a decrease in production if weeds are not controlled effectively because they can affect growth and reduce food crop production. Planting paddy rice using irrigated irrigation will cause weed competition with rice so that it can reduce yields by 10-40% depending on the species and density of weeds, soil type, water supply and climatic state. Rice yield losses at the farmer level due to the presence of rivals with weeds reach 10-15% (Farmanta et al., 2016).

The presence of weeds on cultivated plants will reduce crop yields. Losses caused by weeds are caused by competition with cultivated plants in terms of nutrient extraction, water, sunlight and growing space. In addition, weeds can secrete *allelopathic* compounds and can be hosts for pests and pathogens of cultivated plants (Utami &; Purdyaningrum, 2012).

One of the ways of weed control is by identifying the diversity and dominance of weeds. The results of Dahlianah's research (2017) stated that there are 4 families, 5 genera, and 7 species of weeds in tidal rice fields in Manggaraya Village, Tanjung Lago District, Banyuasin Regency, South Sumatra Province. The structure of rice weeds in tidal fields with the highest INP value is the weed type *Echinochloa chicken leg* (41.16%). The results of Agustina & Yursida's research (2015) showed that weeds were dominant in rice plantations in Tidal Land, Banyu Urip Village, Tanjung Lago District, with an average ratio The highest number of successive predominations were: *Ludwigia octovalvis*, *Fymbristilis littoralis, Alternanthera philoxeroides* and *Cyperus chicken.*

Weed control is effective if we know the types of weeds in rice fields. According to Kastanja (2011) the success of weed control must be based on sufficient and correct knowledge of the biological nature of weeds

through identification, this method is a step First to explore the possibility of appropriate control.

Efforts made to determine the type and population of weeds are 1) exploring a rice field, which aims to collect data on weed populations growing in the planting area rice, 2) Identification which is an effort to recognize something that observes the characteristics of plants that are analyzed simply. Local rice plants often find various types of weeds, but there is still little information or research that explains the types of weeds found in rice fields in the Province Banten, especially in Patia Village, Patia District, Pandeglang Regency.

RESEARCH METHODS

The type of research to be carried out is non-experimental research carried out with exploration methods, namely identifying rice weeds in rice fields in Patia Village, Patia District, Pandeglang Regency.

Research Tools and Materials

Equipment used in the study includes machetes, boxes, shovels, uls, tape meters, notebooks, stationery, rapia ropes, smartphone cameras, rulers, pegs, *google earth*, label paper, *soil tester*, newspaper, cardboard, cardboard and *hand sprayer* or spray.

The material used in this study was rice weeds in rice fields in Patia Village, Patia District, Pandeglang Regency.

Procedure

- *Research Site Survey*

The survey was conducted by exploring villages covering 5 RWs randomly. The survey was also conducted through interviews with local farmers. The existence of rice cultivation, the age of rice, the agricultural system and the presence of rice weeds obtained are then recorded in the research notebook. Photo documentation is also carried out during the survey.

- *Determination of Research Blocks*

Purposive determination of rice blocks based on criteria that are rice plantations using conventional monoculture agricultural systems with non-intensive application of pesticides and rice age 3 weeks after planting and not being carried out weed cleaning.

The research block was made as many as 5 blocks in 5 RWs because Patia village consists of 5 RWs. The determination of blocks 1, 2, 3, 4 and 5 is carried out sequentially according to the RW sequence number. In each research block, the measurement of coordinate points was carried out using *Google Earth.*

- *Plot Creation*

In each research block, a plot with a size of 2x2 m was made in a square shape using 4 pegs around the sides given raffia rope and the distance between the plot and the ripen was 1 m. The placement of plots in research blocks is carried out randomly.

- *Measurement of Environmental Factors*

Microclimate components that affect growth are air and soil humidity, air and soil temperature so it is very necessary to measure environmental factors such as temperature, humidity and soil pH. Measurement of environmental factors was carried out in the morning at 08.00 WIB when sampling rice weeds in the research plot. Measurement of environmental factors in the form of pH, humidity and mpatur using *a soil tester*.

- *Rice Weed Sampling*

Weed sampling was carried out at 08.00 WIB. Weed sampling was carried out on each research plot. Weeds taken are weeds that have complete organs. Picking is not carried out on weeds that are still in the sprouting stage. Weeds are taken whole (leaves, stems, and roots) with a small shovel then the roots are carefully separated from the ground then put into a plastic bag to take to the laboratory. Documentation is carried out during the weed picking process. The number of weeds grown is obtained by counting the number of weeds growing on each plot plot, then counting all the number of individuals in the weed plot plot.

Speed esimen was later identified.

- *Weed Identification*

Identification of rice weeds was carried out by observing external morphological characters such as leaves, stems and roots and adjusted based on description and identification with reference to the book Flora Steenis (2008).

- *Data Collection*

Weeds that have been identified and species determined, then the data are entered into a table and include the number of individuals in each type. The table of types, types and quantities of weeds is then used in data analysis.

Data Analysis

Test parameter data used in this study including *Shannon Wiener* diversity index (H'), evenness index (J'), dominance index (D), wealth index (S) and abundance of weed species with the formula Dombois & Ellenberg (Mazidaturohmah et al., 2018)

RESULTS AND DISCUSSION

Types of Weeds in Rice Fields

Table 1. Types and Numbers of Rice Weed Individuals in Patia Village, Patia District, Pandeglang Regency.

Species Region Name		**Number of Individuals per Research Block**				
		Plot 1	**Plot 2**	**Plot 3**	**Plot 4**	**Plot 5**
Cecabean	*Ludwigia octavalvis* (Jacq) Raven	14	16	18	8	5
For sake	*Cylindrical orders* L. Beauv	11	3	14	9	17
Meniran	*Spigelia anthelmia*	2	0	1	0	3
Friendship	*Ageratum conyzoides*	5	1	6	7	5
Gunda	*Spihemoclea zeylanica*	1	2	1	0	4
Crema	*Altemanthera sessillis*	4	4	2	2	3
How-to	*Eclipse the prostate*	2	0	5	4	7
Puzzle	*Cypress is deformed* L	7	8	10	9	8
Jampang Grass	*Digitaria* sp	4	7	7	6	8
Princess Malu	*Mimosa chaste* L	2	1	0	3	1

The results showed that the types of weeds in the rice fields of Patia Village, Patia District, Pandeglang Regency include *Ludwigia octovalvis* (Jacq), Raven, *Cylindrical orders*L. Beauv, *Spigelia anthelmia*, *Ageratum conyzoides*, *Sphenoclea zeylanica*, *Altemanthera seated*, *Eclipta prostate*, *Cypress deformed* L., *Digitaria* sp. *and Mimosa pudica* L.

Vegetation in rice fields is always damaged periodically due to tillage, or due to control, but there is weed vegetation that always appears in the rice field area. The emergence of weeds in rice fields can be categorized as secondary succession; the community can change in a progressive or retrogressive manner (Purnomo, 2011). In the agricultural sector, weeds are plants that have a negative impact on cultivated plants either directly or indirectly. Weeds that interfere with productive plants during the growth and development of plant life are one of the important problems that can reduce crop production. The percentage of decline in production of each type of cultivated crop is influenced by the weed community in the agricultural area (Suryatini, 201: 8).

Weeds as plant nuisance organisms (OPT) are among the important obstacles that must be overcome in increasing rice production in Indonesia. The decline in rice productivity is caused by, among others, competition between weeds and rice plants. The decrease in rice yield due to weeds ranges from 6-87% of weeds have a very competitive nature because they have an efficient breeding mechanism that is able to multiply sexually By producing many seeds and vegetatively, so that it greatly reduces the results of cultivated plants. The decline in crop yield varies greatly depending on various factors, including the ability of plants to compete, types of weeds, plant age and weed age, techniques, their cultivation and duration of competition (Utami &; Purdyaningrum, 2012).

Weeds reduce crop yields in competition for light, oxygen and CO_2, as well as food. The decrease in crop yield is caused by weeds that can reduce growth activities, including stunted plant growth, chlorosis, nutrient deficiencies, and the occurrence of reduction in the number and size of plant organs. Symptoms of nutrient deficiency in rice plants can result in complete failure of seedling plants, very stunted plants, symptoms on leaves that are distinctive, and abnormalities – abnormalities arising in plant tissues (Antralina, 2012).

Weeds do not always harm plants, at the population level or certain periods have no effect or little effect on plants so that weeds that grow h in that period are unnecessary controlled. Therefore the way of cultivation, the type and density of weeds will largely determine when weeding weeds. The composition of weeds will vary on plants that have different heights. Soil type, planting pattern and type of cultivated plants affect the number and diversity of weed species. Weed species are also affected by plant density, soil fertility, cultivation and tillage patterns. Weed management can be carried out better if the level of weed dominance in rice plants is first known (Rohimat et al., 2017).

The large number of types of weeds that grow in these rice fields can be caused by tillage and fertilizer inputs. The hoeing process during soil processing can cause the lifting of weed seeds to the soil surface. The storage of weed seeds in the soil (*seed bank*) can germinate into individual weeds at any time if supported by environmental factors (Dahlianah, 2017).

Ludwigia octavalvis (Jacq) Raven, weed plants are broadleaf weed plants and are found in many rice farms have fibrous roots, pinnate leaves face to face only leaf picking and yellow flowers (Stenis 2008). Leaves scattered, opposite, pinnateb-rayed; Flowers are plucked leaves or as bunches, numbered 2-6; The leaves of the corolla are yellow, regularly numbered 2-4 at the end of the tubular flower axis. Petals clinging. Crown leaves are free, seated or hoofed (Syaifudin &; Nofa, 2020).

*Cylindrical orders*L. Beauv is a weed that often appears in tropical and subtropical regions. Weed

*Commanded cylindrica*L. Beauv is easily spread due to sexual and asexual reproduction. It is assumed that seeds per bunch of flowers are about 500-1.000 seeds, and per m^2 about 10-20 bunches of flowers are obtained. Seeds *of Imperata cylindrica*L. Beauv are very easily carried away by the wind, so it is able to spread far. Likewise, the possession of allelopathy, makes the reeds very solid in a new place. Besides seeds, the weed *Cylindrical orders*L. Beauv produces rhizoma, then when the rhizoma is cut, then each cut (several nodes) will form a new plant bud (Juarsah, 2015).

Spigelia anthelmia is a weed that has taproots. *Spigelia anthelmia* has a cylindrical stem, a smooth or waxy surface, upright growth. The leaves of *Spigelia anthelmia are* oval, green with flat edges. Sitting face to face and the number of leaves is compound, it has pinnate leaf bones with tapered leaf tips while the base of the leaves is rounded. Flowers are located at the base of the leaves, spherical in shape and yellow in color (Kastanja, 2011).

Ageratum conyzoides belong to flowering plants, members of the family Asteraceae originally from tropical America, growing in the tropics. In Indonesia, Ageratum *conyzoides* is one of the nuisance plants/weeds that have the potential to inhibit rice growth through rice roots so that it can lack nutrients and *Ageratum*plants *Conyzoides* can live in fields, yards, gardens, banks and waterfronts (Astriani, 2010).

Spihemoclea zeylanica is an annual plant belonging to the broadleaf type. *Spenochlea zeylanica* weed is found in many rice fields. The weed *Spihemoclea zeylanica* has cord-shaped roots, hollow stems, and white grain-shaped flowers. *Spihemoclea zeylanica* multiplies through seeds. *Altemanthera sessilis* is a type of broadleaf weed that has a physical state of creeping growth or growing upwards until scattered, plant height reaches 1 m. In addition, the flowers on *Alternanthera sessilis* berestms white or pink, very small (Lestari et al., 2012).

The eclipse *prostate* can be annual (annual weed) and annual (*perennial weed),* often branched sideways or upright with stands 10-80 cm high, has a taproot, and has the potential to grow roots on each internode. The trunk and branches are green to purplish, and long hairy. *The Eclipta prostate* is able to adapt to changing environments, especially in poorly drained places, wet areas around rivers, ditches, or swamps, but rich in sunlight. *Eclipta prostate* weed resists living on saline soils to a height of 2000 m. High breeding ability, flowering in one year, *Eclipta prostate* is able to produce 17,000 seeds per individual plant (Mazidaturohmah et al., 2018).

Cypress is deformed L. It is a weed that does not shade rice plants, but can compete for water and nutrients. According to Steenis (2008) *Cypress is deformed* L. The Cyperaceae family has exceptional resistance to mechanical control because it has stem tubers in the soil that can last for months. *Digitaria* sp. is a group of grass weeds (*Poaceae*) which have an important role in competing with staple crops both space, absorption of nutrients and water and development of very fast *weed Digitaria* sp.

Mimosa chaste L. has a taproot shape, woody stem shape and there are thorns and compound leaf shape. Plant *Mimosa chaste* L. Included in closed seed plants (angiosperms) and found in the group of two-piece plants. Plant *Mimosa chaste* L. These pinnate compound leaves and flat-edged leaves have facing leaves and belong to the legume tribe. Leaves *of Mimosa pudica* L. Small in size arranged compound, oblong shape with a pointed tip, green color (some are reddish). When leaves *Mimosa chaste* L. Touched will be theTUP (*Sensitive Plant*) menu. The roots are strong taproots, spherical flowers like balls, pink color, stemmed (Purnomo, 201).

Important Value Index of Rice Weeds in Rice Fields

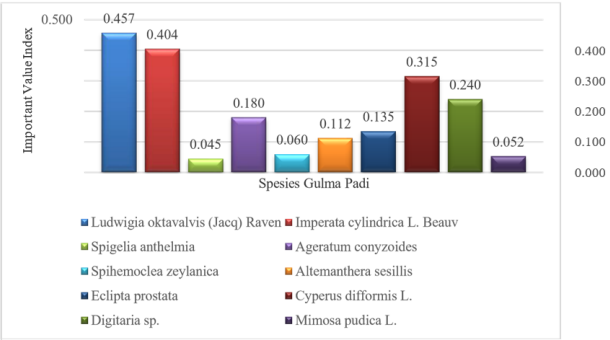

Figure 1. Important Value Index of Weeds (INP) of Rice Weeds in Patia Village Rice Fields Patia Subdistrict, Pandeglang Regency.

The important value index (INP) of rice weeds in rice fields in Patia Village, Patia District, Pandeglang Regency is the highest, *namely Ludwigia octovalvis* (Jacq) Raven at 0.457 and the lowest is *Spigelia anthelmia* at 0.045. The high relative frequency value of a type is an indication that the type is widespread, while a high relative density value indicates that species. *Ludwigia octavalvis* (Jacq) Raven has the highest number of individuals of any other species. Referring to Windari et al (2021) stated that INP is divided into 3 (three) classes, namely high class for INP > 20%, medium class for 10 < INP < 20%, and low class for INP <10%.

Plants belonging to the high class are *Ludwigia octavalvis* (Jacq) Raven; *Cylindrical orders* L. Beauv; *Cypress is deformed* L., *Digitaria* sp., plants belonging to the medium class, namely *Ageratum conyzoides; Altemanthera sessilis;* and plants that belong to the lower class, namely *Spihemoclea zeylanica* and *Mimosa chaste* L. The variety of INP values in each species, indicates the influence of the environment where it grows such as humidity, suhu, and competition between species.

The highest important value index (INP), namely *Ludwigia octovalvis* (Jacq) Raven of 0.457 or 45.7%, means that the weed shows density and dominance that is able to dominate the environment Grow and have the

ability to compete with growing factors such as nutrients, water, light and space that are getting stronger in rice. This is in accordance with the opinion of Saitun et al., (2020) which states that the higher the INP value of a weed in one agricultural area, the higher the occurrence competition for growing factors between weeds and staple crops.

This shows that the weed species is able to adapt to different environmental factors. Puzzle weeds are included in wild plants that are difficult to eradicate because they produce tubers that make these plants regenerate quickly. An important factor in weeds is the production of tubers and rhizomes. Tubers have an asexual reproduction mechanism and are the main dispersal unit that can withstand extreme conditions. Tubers make plants difficult to control because only translocation herbicides have the potential to be effective in eradicating weed plants (Windari et al., 2021).

Shannon-Wiener Diversity Index (H') of Rice Weeds in Rice Fields

Table 2. Shannon-Wiener Diversity Index (H') of Rice Weeds in Rice Fields Patia Village Patia District Patia District.

No.	Plot	***Shannon-Wiener* diversity** index **(H')**
1	1	2.024
2	2	1.718
3	3	1.881
4	4	1.98
5	5	2.09
	Average	1,94

The diversity index (H') can be calculated using the Shannon Weaver index. Knowing the value of H' aims to determine the percentage of diversity of an organism in an ecosystem. H' aims to determine the number of species that exist at a time in a particular community (Yuliana &; Ami, 2021).

The calculation of the Shannon-Wiener Diversity Index (H') of weeds in the rice fields of Patia Village, Patia District, Pandeglang Regency is 1.94 (moderate diversity). The diversity index describes the level of diversity in a community, the high diversity in a community indicates the more stable or stable the ecosystem. The higher the value of species diversity, the greater the level of diversity, while a low vegetation diversity index value indicates that there has been pressure on vegetation (Oktaviani *et al.*, 2015). Pressure on rice field vegetation can be in the form of natural factors such as drought disasters or human intervention factors such as intensive tillage measures and weed control with herbicides.

Ecosystem stability is closely related to diversity, if the ecosystem tends to be stable, then ecosystem diversity is relatively high. If the condition of the ecosystem is low, the environment has diversity disturbances, and if species diversity tends to be low, it means that the ecosystem environment is polluted (Windari et al., 2021). Weeds tend to exist around cultivated plants in any field under any conditions and multiply rapidly and are difficult to control mechanically. Species diversity can be used to express commodity structure, i.e. the ability of a commodity to protect itself to remain stable despite interference with its component components (Saitun et al., 2020).

The Shannon-Wiener Diversity Index (H') value will increase as the number of species in the community increases and the distribution is more even. Species diversity is closely related to root rhizomes and can also play a role in dispersal, especially in intensively mechanized agriculture. Cutting and removal of rhizome roots will often be done when planting with a cultivated plant. Weeds will be able to grow widely if the mechanical work cannot be done properly. Furthermore, it was also revealed that the spread of seeds/parts of weeds eaten by the animal and through the digestive tract, can still grow (Cyperaceae group, Gramineae, and shrubs). Then spread through water, usually this happens for aquatic weeds, either in the direction of water flow factors, seeds/parts of weeds that float, or the nature of seeds or weeds that are tolerant of water absorption (Suryatini, 2018).

Abundance of Rice Weed Species in Rice Fields

Table 3. Abundance of Weed Species in Rice Fields, Patia Village, Patia District, Pandeglang Regency.

No	Species	**Species** Abundance
1	*Ludwigia octavalvis* (Jacq) Raven	22.85%
2	*Cylindrical orders* L. Beauv	20.22%
3	*Spigelia anthelmia*	2.25%
4	*Ageratum conyzoides*	8.99%
5	*Spihemoclea zeylanica*	3.00%
6	*Altemanthera sessillis*	5.62%
7	*Eclipse the prostate*	6.74%
8	*Cypress is deformed* L	15.73%
9	*Digitaria* sp.	11.99%
10	*Mimosa chaste* L	2.62%

The results of the calculation of the abundance of weed species in the rice fields of Patia Village, District Patia of Pandeglang Regency, namely *Ludwigia octovalvis* (Jacq) Raven at 22.85%; *Cylindrical orders* L. Beauv by 20.22%; *Spigelia anthelmia* by 2.25%; *Ageratum conyzoides* by 8.99%; *Spihemoclea zeylanica* by 3%; *Altemanthera sessilis* by 5.62%; *Eclipta prostate* by 6.74%; *Cypress is deformed* L. by 15.73%; *Digitaria* sp. by 11.99% and *Mimosa chaste* L. By 2.62%

These results show that the weed *Ludwigia octavalvis* (Jacq) Raven has the ability to utilize infrastructure to grow higher than other weeds. Differences in weed types are caused by differences in plant management, including water regulation and fertilization as well as differences in morphology and character of constituent plants that can change the microclimate so that it causes different responses in weed types (Imaniasita et al., 2020).

The difference in the species composition of plantain weeds in rice fields in each research plot is influenced by tillage and how weeds spread, there are several kinds of weed distribution, namely dispersal by animals and dispersal through water.

Dominance Index (D) of Rice Weeds in rice fields

Table 4. Dominance Index (D) of Rice Weeds in Rice Fields, Patia Village, Patia District, Pandeglang Regency.

No.	Weed species	Abundance	p_i	$(p_i)^2$
1	*Ludwigia octavalvis* (Jacq) Raven	61	0.228	0.052
2	*Cylindrical orders* L. Beauv	54	0.202	0.041
3	*Spigelia anthelmia*	6	0.022	0.001
4	*Ageratum conyzoides*	24	0.090	0.008
5	*Spihemoclea zeylanica*	8	0.030	0.001
6	*Altemanthera sessillis*	15	0.056	0.003
7	*Eclipse the prostate*	18	0.067	0.005
8	*Cypress is deformed* L.	42	0.157	0.025
9	*Digitaria* sp.	32	0.120	0.014
10	*Mimosa chaste* L.	7	0.026	0.001
	Dominance Index **(D)**			0.150

The calculation of the Dominance Index (D) of weeds in the rice fields of Patia Village, Patia District, Pandeglang Regency is an average of 0.15. The third highest dominance index in the weed *Ludwigia octavalvis* (Jacq) Raven is 0.052 or 5.2%, *Cylindrical orders* L. Beauv by 0.041 or 4.1% and *Cypress is deformed* L. which is 0.025 or 4.5%.

Dominance is the ability of a weed to survive in a particular agroecosystem by competing with other weeds. Dominance is the proportion between the area covered by plant species and the total area of habitat. Bad for the ecosystem can be caused because of the dominance of species in a place. Dominance is closely related to invasion and a trait that illustrates the ability of dominant plants and endangered ecosystems, habitats, and other plants found in a place is the meaning of invasion (Windari et al., 2021).

Generally, weeds produce large quantities of seeds, which are in the soil and serve as seed banks in the next growing season. Such annual weeds should be controlled in a timely manner to prevent a reduction in crop yield. And it must be controlled before flowering and fruiting weeds. This is to reduce seed production which will become a seed bank (Yurlisa, 2021).

Compared to the dominant weeds in rice crops, there are several different types of dominant weeds. This difference in dominant weed species is thought to occur due to changes in land conditions or cultivation treatment of each type of cultivated plant. In addition, it is also thought to be influenced by the ability of a species to adapt to environmental changes, and the ability of competition between weed species. The dominance of weeds in each experimental plot will affect the control recommendations applied. This situation has implications for different ways of controlling (Putra et al., 2018).

Weed control carried out by farmers at the research site is manual control, but this method requires more time and cost. Manual weed control by pulling is effective for controlling annuals or two-season weeds. For annual weeds, removal control will lead to cutting off plant parts (rhizomes, stolons and root tubers) that are dead in the soil. The rest of the plant is an effective part of growing and developing again (Farmanta et al., 2016).

Conditions of Environmental Factors

Table 5. Measurement of Environmental Conditions in Rice Fields of Patia Village, Patia District, Pandeglang Regency.

Parameters	Measurement results on the plot					
	1	2	3	4	5	Average
Temperature (^OC)	26	27	27.5	26 27		26.7
Moisture	5	1,5	5 5		1.5	3.6
Ph	7,5	7,5	7 7.5	7.5		7.4
Light intensity (lux)	700	400	200	700 400		480

Measurement of environmental conditions in the rice fields of Patia Village, Patia District, Pandeglang Regency obtained an average temperature value (^oC) of 26.7 ^oC, Humidity 3.6 RH; pH of 7.4 and Intensity light

of 480 lux. The community of a plant can be affected by several factors. One of these factors is the difference in location or height of a place. Because this can affect light intensity, temperature, and humidity which are climatic factors (Suryatini, 2018).

The difference in the number of individual weeds obtained between one place and another is also influenced by environmental factors where they grow such as temperature, humidity, soil, space growth and light (Yussa *et al* 2015). Light is a factor that affects the number of species living in a community, where light greatly affects the type and number of individuals that can grow in a community. the place. In addition to light, the climate received in a place will also affect differences in the type and number of individual weeds. The existence of differences and changes in the environment can affect the composition of weed communities that occupy an area (Farmanta et al., 2016).

Chairul & Rahmatul (2013) stated that weed survival is influenced by several factors, one of which is soil pH. A pH close to neutral (6.5-7.5) is best for growth and availability Nutrient content. Soil pH determines whether or not nutrients can easily be absorbed by plants. In general, nutrients are easily absorbed by plant roots if the soil pH is around neutral, because at that pH (Suryatini, 2018).

CONCLUSIONS

Based on the results of research and discussion, it can be concluded as follows:

- The types of weeds found in the rice fields of Patia Village, Patia District, Pandeglang Regency are *Ludwigia octavalvis* (Jacq) Raven, *Cylindrical orders*L. Beauv, *Spigelia anthelmia*, *Ageratum conyzoides*, *Spihemoclea zeylanica*, *Altemanthera sessillis*, *Eclipta prostate*, *Cypress deformed* L., *Digitaria* sp and *Mimosa chaste* L.
- The structure of the weed community in the rice fields of Patia Village, Patia District, Pandeglang Regency is the Shannon-Wiener Diversity Index (H') of 1.94; Index Evenness (J') of 0.884; Dominance Index (D) of 0.15.

Suggestion

Based on the results of research and conclusions, it can be suggested, namely:

- Weed control should be done as soon as possible to suppress the growth of weeds. Control can be done mechanically by using t-style agricultural tools such as hoes, as well as chemically by using systemic herbicides for land preparation and contact for weeding before weeds it produces seeds.
- It is necessary to study the relationship between weed diversity and rice planting productivity.

***Competing Interests*:** The author declare that there are no competing interests.

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