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Soil Conservation Techniques And Topsoil Depth And Density Of Vegetation Growing In The Area Palm Oil Plants

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Abstract

Research with Title: " The Relationship between Soil Conservation Techniques, Topsoil Depth, and Density" Vegetation Growing in Plant Areas Coconut Palm oil at PT Perkebunan Nusantara IV Regional II Marjandi " was carried out For know connection between implementation technique conservation land to topsoil depth and density vegetation in plantation areas coconut palm oil. There are 10 plots with different thicknesses in the IV Marjandi plantation with average thickness 29.7cm. Conservation techniques land is one of the effort management land for the purpose For reduce erosion, maintaining fertility land, as well as maintain quality environment plantation.Research This was conducted at the IV Marjandi Plantation from April 2 to June 2, 2026. This research use design random research group (RAK) done repeatedly to see whether There is connection technique conversation soil, depth of top soil, and density vegetation growing in plantation areas marjandi, and using laboratory tests, namely c- organic with use Walkey and Black method with technique reading through UV- Vis Spectrophotometry. Phenomena discovered show existence connection between organic C content land with density vegetation at the location research. Plot with vegetation more Lots has organic C more tall up to 2.61%, while the plot with vegetation seldom only 1.20%. Low organic C relate with lack of return remainder plants and high decomposition processes.

Keywords: Soil Conservation Techniques, Topsoil Depth, and Density Vegetation, Plants Coconut Palm oil

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INTRODUCTION

Coconut oil palm (*Elaeis) guineensis* Jacq.) is one of the commodities leading in the sector Indonesian plantations because produce oil vegetable which is much needed in the domestic market and global. Indonesia has become manufacturer oil palm oil the largest in the world since in 2006, surpassing Malaysia and other producing countries others. In 2019, production Indonesia's *crude palm oil* (CPO) is recorded by 47.12 million tons, an increase to 48.29 million tonnes in 2020, however experience decline to 46.22 million tons in 2021. Fluctuations production This become attention important in context management land and factors environment that influences productivity coconut palm oil (BPS-Statistics, 2024).

Characteristics physique land is factor important in cultivation plant coconut oil palm (Adu et al., 2022). Sloping land has the potential experience damage land consequence erosion and resulting in the decline content material organic the land followed with decrease content nutrients and soil water availability for plant. Experienced lands erosion heavy generally own level high density as consequence erosion layer on more land loose (Miskana, 2022)

In the Indonesian economy, industry oil palm oil own role strategic, among others producer foreign exchange largest locomotive economy national, sovereignty energy, driving force sector economy democracy, and absorption power work. Coconut plantation Indonesian palm oil is growing fast as well as reflect existence revolution plantation palm oil. Coconut plantations Indonesian palm oil is growing in 22 provinces of 33 provinces in Indonesia. Two islands main center plantation coconut palm oil in Indonesia is Sumatra and Kalimantan (Ahmad & Kumar, 2023). Around 90% of plantations coconut palm oil in Indonesia is in second place island palm oil said, and secondly island That produce 95% of production oil palm oil Indonesia's raw materials. In the period 1990–2015, there was revolution business plantation coconut palm oil in Indonesia, which is marked with grow and development plantation people with fast, namely 24% per year during 1990–2015. In 2015, the area plantation Indonesia's palm oil plantations are 11.3 million ha (Ministry of Agriculture of the Republic of Indonesia, 2017) and in 2017 reached 16 million ha (Behera et al., 2020). Currently, the proportion of the biggest is plantation people by 53%, followed by plantation 42% of private companies, and 5% of state-owned plantations. In 2017, Indonesia's CPO production was predicted to reach reached 42 million ton.Development industry oil growing Indonesian palm oil fast the has interesting attention world society, especially manufacturer oil vegetable world's major producers. Indonesia is a producer country oil palm oil the world's largest since 2006. In 2016, Indonesia succeeded surpassing Malaysia. Indonesia's share of CPO production has reached 53.4% of the world's total CPO, while Malaysia

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has share by 32%. Thus case in point in the oil market global vegetable oil palm oil is also successful outperform oil soybean oil since 2004. In 2004, total CPO production reached 33.6 million tons, while oil soya bean is 32.4 million tons. In 2016, the share of global CPO production reached 40% of the total vegetable production. world's premier, while oil soya bean own share by 33.18% (United & Agriculture, 2016)

Coconut oil palm (*Elaeis) guineensis* Jacq.) is commodities plantation main in Indonesia which plays a role important in economy national productivity coconut Palm oil is greatly influenced by conditions environment, one of them is topography land that includes slope and shape surface land (Fikri et al., 2023).

According to (Sarwono Hardjowigeno, 2010) classification land is business For differentiate land based on on the characteristics it possesses. With method This so lands with same nature entered to in One same class. This is important Because lands with different properties need different treatment (management) (Sarwono Hardjowigeno, 2010)

The depth of the topsoil also determines availability of water and nutrients for plants. Deep soil allows root grow optimally and absorb nutrition more okay, meanwhile land shallow limit growth roots and nutrient (Behera et al., 2016).

Condition fertility poor soil will lower coconut FFB production palm oil. Degradation land in plantation areas coconut palm oil generally caused by the occurrence of erosion and conditions good soil will increase productivity plant coconut sedimentation due to run off and high bulk density (Banks & Melves, 2012). Therefore That conservation land required For prevent erosion, repair damaged land and maintain as well as increase productivity land so that the land can be used in a way sustainable (Simangungsong, 2011)

Weeds is competitors main coconut palm oil in get light, water, and nutrients. The existence of weeds that do not under control can lower results harvest in a way significant (Saputra et al., 2025). (Saputra et al., 2025) find that composition weeds different between land flat and hilly, with Nephrolepis bisserata dominant on land flat and Mimosa pudica on the ground hilly. Index diversity tall weeds show variation large species so that control weeds must customized condition field (Benetti & Sartori, 2023).

Weeds is plants that exist in a certain area time definite that is not desired by humans (Anggraini, 2017) Existence weeds in the plantation coconut palm oil can trigger losses in various aspects, for example lower production fruit as well as bother smoothness activity cultivation like fertilization and harvesting (Sari et al, 2018) According to (directorate general plantations, 2014) presence weeds become competitors important for plant coconut oil palm, so that the area

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dominated weeds certain such as Mikania micrantha, Asystasia cromandeliana and Imperata cylindrica can lower production up to 20% (Bhatt et al., 2024).

A number of type reported weeds found There is plantation coconut palm oil among them is Imperata reeds (*cylindrica)*, grinting (*Cynodon dactylon)*, grass copper (*Ishaemum timorence)*, daughter Mimosa *pudica,* potato (*borreria) alata)*, babandotan (Ageratum conyzoides), and teki tubers (nutsedge) Tuberous Cyperus rotundus) (Biazatti et al., 2022). Diversity weeds are influenced by conditions environment, many influencing factors diversity weeds on each location observations, such as light, nutrients, processing land, way cultivation plants, as well as distance plant or density plants used different as well as age plant said. Species weeds are also affected by density plants, fertility land, pattern cultivation and processing land (Busman et al., 2021). Distribution weeds anataara One area with area other different in accordance with factors that influence it (Dissanayaka & Bandara, 2020). Identification weeds as well as introduction types weeds dominant is step beginning in determine success weeds (Dibisono et al., 2022).

Existence weeds diarrhea planting cultivation can cause loss Good from aspect quantity and quality production (Boafo et al., 2020). Losses caused by weeds decline results agriculture consequence competition or competition in acquisition source power (water, air, nutrients, and space) live), become host pests and diseases, can cause plant poisoning consequence compound the poison it possesses weeds (allelopathy), making it difficult worker field and processing results as well as can damage or can hinder use tool agriculture (Dibisono et al., 2022)

RESEARCH METHOD

Place and Time

This research carried out at PT Perkebunan Nusantara IV Marjandi, the research This done in the month April 2026 – May 2026

Research Methods

This research is study descriptive with method survey field (Ditzler, 2017). This research aim For describe connection between technique conservation soil, depth of top soil, and density vegetation growing in the crop area coconut Palm oil at the Nusantara IV Marjandi Plantation. Approach descriptive used For describe condition current implementation technique conservation land as well as variations to top soil depth and density vegetation without do testing hypothesis in a way statistics inferential (Caliman et al., 2020). Focus main from study This is For study correlation between technique conservation land, topsoil depth, and density vegetation in the

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garden Marjandi PT. Perkebunan Nusantara IV Regional II. With approach this, it is hoped can obtained comprehensive understanding about How factors environment physique the each other related and influencing distribution as well as condition vegetation in the area research (Hambloch, 2022). Population in study This is the entire Garden area Marjandi PT. Perkebunan Nusantara IV Regional II which has characteristics topography, type soil and varied vegetation sample study will determined use field survey method (Guillaume et al., 2015).

Research Objects and Variables

Object study is a plant area coconut palm oil that implements various technique conservation land. Observed variables includes :

1. Conservation techniques land, including types and shapes conservation applied
2. The depth of top soil, namely thickness layer land above what is measured in unit centimeters (cm).
3. Density vegetation, namely amount individual growing vegetation or percentage closing vegetation in units wide certain.

Data Collection Method

Research Design

Research using approach survey field with method survey field with sampling method. Variables study that is :

1. Variables free : technique observation soil, topsoil depth.
2. Variables bound : density vegetation weeds.

Sampling techniques

Samples are determined using purposive sampling, namely based on difference technique conservation applied land. On every technique conservation set several observation plots as sample study (Chong & Chung, 2020).

Data collection technique

A. Observation Field

Done For identify and describe type technique conservation land applied to plantation areas coconut palm oil.

B. Measurement Topsoil Depth

The depth of top soil is measured use drill land or tool dig simple, from surface land until

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limit topsoil layer characterized by differences color and texture land (ISO, 2017).

C. Observation Density Vegetation

Density vegetation observed use method square, with count amount individual vegetation or percentage closing vegetation in each observation plot.

Materials and tools

Material

1. Soil samples
2. stake / wood
3. Rope raffia

Tool

4. Meter / Roll meter
5. Book notes
6. Hoe small
7. Digital camera
8. Stationery

Research Stages

Stages in study This consists of from a number of step systematically in order to obtain valid and appropriate results purpose (de Souza et al., 2023). The following is stages research conducted :

1. observation field For determine sampling points based on variation technique observation land, topsoil depth, and density vegetation.
2. Compilation tools and materials, prepare drill soil / hoe, meter, camera cellphone and book notes.
3. Do observation direct to technique conservation land
4. Classifying type technique conservation land found
5. take notes results measurement For entered to in research database.
6. measure top soil depth directly and record every difference thickness between location.
7. observe and record type vegetation dominant around point sample
8. grouping vegetation based on type and level density.
9. processing the results data field measurements using statistical software.
   statistics descriptive. Correlation between technique observation land, top soil depth, and

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density vegetation with soil parameters. Regression For see influence variables free to condition land (Frene et al., 2024).

Data Analysis

Early stage done analysis descriptive For describe characteristics of each variable, namely technique observation land, top soil depth, and density vegetation.data served in form table, graph, average value, standard deviation, minimum, maximum values, and spread frequency For give description general condition location study (Joseph et al., 2017).

RESULTS AND DISCUSSION

General Information

This research carried out in plantation areas coconut palm oil PT Perkebunan Nusantara IV Marjandi which has condition topography varies, starting from from flat until hilly. In terms of general, location study own type diverse land with level fertility currently until high, and influenced by rainfall enough rain tall (Fujii et al., 2021).

Plantation area This has apply a number of technique conservation land, good in a way mechanic and vegetative conservation techniques the done For reduce erosion, maintaining fertility land, as well as maintain depth topsoil layer. In addition, the condition vegetation weeds on site study Enough diverse with level different densities in each point observation (Kularathna et al., 2024).

Information Environment Research

PT.Perkebunan Nusantara IV Marjandi, located in the sub-district panombean Panei, Regency Simalungun North Sumatra Province. Based on data from document operational, total land clearing of PTPN IV Plantation Unit Marjandi is 2,075 hectares. The height PTPN IV Plantation Unit area Marjandi is at 744 meters on surface sea level (masl). Details of area & division about gardener Marjandi that is :

1. Division Work, garden This shared a number of afdeling (administrative area) garden) for make it easier supervision technical cultivation, starting from maintenance, beating, until harvest.
2. Structure Organization, every Section led by the Assistant Afdeling who is responsible answer direct to manager garden.

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3. Condition Environment, because be on the plains height, garden area tend own undulating topography until hilly, so that system drainage and conversion land become focus main in operational the environment (Guillaume et al., 2016).

Observation result Field

Identification Results Vegetation Weeds in Marjandi

Table 1. Types of Weeds at the Marjandi Location

No	Types of Weeds	Regional Name	Family	Group
1	Kyllinga nemoralis	Jukut pendul	Cyperaceae	Puzzle
2	Ageratum conyzoides	Bandotan	Asteraceae	Broad leaves
3	Axonopus compressus	Grass mini elephant	Poaceae	Grass
4	Mikania micrantha	Sembung creeper	Asteraceae	Broad leaves
5	Peristrophe bivalve	Magenta leaves	Acanthaceae	Broad leaves
6	Spermacoce exile	Weeds button	Rubiaceae	Broad leaves
7	Hyptis capitata	Knob grass	Lamiaceae	Broad leaves
8	Erechtites hieraciifolius	Relict footprint	Asteraceae	Broad leaves

Based on results identification vegetation weeds on site Marjandi, found as many as 8 types weeds consisting of from three group main that is weeds leaf wide, weeds grass and weeds teki. The most dominant weed is weeds leaf wide with total of 6 types, including *Ageratum conyzoides, Mikania micrantha,* and *Peristrophe bivalve.* Dominance weeds leaf wide This show that condition environment at the location Marjandi Enough support growth weeds that need relative nutrients high (Li et al., 2022). Meanwhile that, weeds grass and nutsedge each only found One type, namely *Axonopus compressus* and *Kyllinga nemoralis* (Kayombo & Lal, 2020).

Topsoil Thickness in Marjandi

Table 2. Topsoil Thickness in Marjandi

No	Plot	Thickness (cm)
1	Plot 1	34
2	Plot 2	33
3	Plot 3	29
4	Plot 4	27
5	Plot 5	30

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6	Plot 6	27
7	Plot 7	29
8	Plot 8	30
9	Plot 9	30
10	Plot 10	28
Average	-	**29.7**

Based on results measurement, thickness of topsoil on site Marjandi range between 27 cm to 34 cm with an average of 29.7 cm. This is show that topsoil layer at the location This classified as Enough thick. Relative topsoil thickness tall indicates that land own potential good fertility Because layer This generally rich in material organic and nutrients.

Density Vegetation on Each Plot

Table 3. Density Vegetation on Plot 1

No	Vegetation Name	Scientific Name	Amount
1	Weeds Pocket	Spermaceae Exilis	48
2	Bandotan	Ageratum Conyzoides	512
3	Mini Elephant Grass	Peristrophe Bivalves	42
4	Knop Grass	Hyptis Capitata	137

Based on Table it is known that that vegetation with amount the highest on plot 1 is bandotan (*Ageratum conyzoides)* as many as 512 individuals, while amount lowest is grass 42 individual mini elephants (Lestariningsih et al., 2023).

Table 4. Density Vegetation Weeds on Plot 2

No	Vegetation Name	Scientific Name	Amount
1	Mini Elephant Grass	Peristrophe Bivalves	188
2	Grass Button	Spermacace Exilis	68

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3	Grass Sintrong	Crossocephalum Crepidioides	48
4	Relict Footprint	Erechtites Hieraciifolius	12

Based on it is known that that vegetation the most in plot 2 is grass mini elephants totaling 188 individuals.

Table 5. Density Vegetation on Plot 3

No	Vegetation Name	Scientific Name	Amount
1	Grass Sintrong	Crossocephalum Crepidioides	43
2	Relict Footprint	Erechtites Hieraciifolius	11
3	Mini Elephant Grass	Peristrophe Bivalves	82
4	Jukur Pendul	Kyllinga Nominalism	29
5	Knop Grass	Hyptis Capitata	4

Based on the table it is known that that vegetation with amount the highest on plot 3 is grass 82 mini elephants.

Table 6. Density Vegetation on Plot 4

No	Vegetation Name	Scientific Name	Amount
1	Mini Elephant Grass	Peristrophe Bivalves	17
2	Jukur Pendul	Kyllinga Nominalism	21
3	Grass Sintrong	Crossocephalum Crepidioides	48
4	Knop Grass	Hyptis Capitata	35

Based on the table it is known that that vegetation the most in plot 4 is grass sintrong as many as 48 individuals.

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Table 7. Density Vegetation on Plot 5

No	Vegetation Name	Scientific Name	Amount
1	Mini Elephant Grass	Peristrophe Bivalves	62
2	Jukur Pendul	Kylinga Nominalism	36
3	Grass Sintrong	Crossocephalum Crepidioides	23
4	Grass Button	Spermacoce Exilis	38

Based on the table about density vegetation based on formulas for K, KR, F, FR, and INP, obtained that there are 8 species vegetation with total individuals as many as 2,394 were found in 10 plots observation. The total density (K) value is 339.4 with density relative (KR) reached 99.98%, total frequency (F) was 3.8, frequency relative (FR) of 105.52%, and the index mark important (INP) total of 205.54%.

Species that have amount individual highest is Peristrophe bivalve with total 930 individuals. Species it also has mark density highest namely 93 and density relatively by 38.84%. In addition (Lubis et al., 2024), Peristrophe bivalve found throughout plot observation with mark frequency 1 and frequency relative 27.78%. INP value of species This of 66.62 (Nelson et al., 2021).

Analysis results laboratory against 10 samples

land show that organic C content land at the location study own different values in each observation plot. The resulting data organic C analysis land presented in Table

Table 8. Results of Organic C Analysis

No Lab	Sample	Parameter
		C- Organic %
1.	Plot 1	1.20
2.	Plot 2	1.74
3.	Plot 3	1.82
4.	Plot 4	2.41
5.	Plot 5	1.82

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6.	Plot 6	1.99
7.	Plot 7	2.57
8.	Plot 8	2.42
9.	Plot 9	2.61
10.	Plot 10	2.48

Based on results analysis in Table 4.14, it is known that organic C content land range between 1.20% and 2.61%. Organic C content lowest is found in Plot 1, namely by 1.20%, while organic C content highest found in Plot 9, namely by 2.61%. The difference The organic C content in each plot shows existence variation content material organic land at the location research. In general general, organic C- value land at the location study classified as low until moderate. Low organic C content in several plots is suspected due to low accumulation material organic inside land, lack of return remainder plants, as well as high decomposition process material organic. In addition, the management of land and conditions environment also influences content material organic land (Sato et al., 2017).

Organic C content land is one of the indicator important in determine level fertility land. The more tall organic C content land so the more Good condition physical, chemical, and biological soil. Organic material play a role in repair structure land, increase capacity retain water, increase activity microorganisms land, as well as help provision nutrients for plants. Plot with higher organic C- content tall allegedly own availability material more organic many, good originate from remainder plant and results weathering surrounding vegetation land. On the other hand, plots with low organic C- content show that content material organic land Still not enough so that required effort repair through addition material organic like fertilizer cages, compost, or return remainder plant to in land.

With Thus, the C- organic content land at the location study show that management material organic need noticed use increase quality and productivity land in a way sustainable. According to study Soil Science (Mahmud & Chong, 2022), organic C- content land is one of the indicator important in determine level fertility land Because influential to characteristic physical, chemical, and biological land. Land with content material good organic generally own structure more land stable, capacity hold more water high, and capable provide more nutrients Good for growth plant (Simarmata et al., 2017).

Based on results research conducted by Sutanto et al. (2022), it was found that that organic C content low land can lower level fertility land Because decrease ability land in keep nutrients

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and water. The research also explains that improvement material organic capable repair characteristic physical, chemical, and biological land so that growth plant become more optimal (Sari, 2023).

In line with study said, the results study Farrasati et al. (2020) on plantations coconut palm oil in North Sumatra shows that organic C content land own connection close with level fertility land and sustainability ecosystem land plantations. Low organic C content can cause decline quality land as well as low ability land in provide nutrients for plants (Farrasati et al., 2019).

In addition, research by Risma Sari et al. (2023) stated that organic C content land that is in the range low can hinder growth plant Because activity microorganisms land become less than optima (Manorama et al., 2021)l. Therefore that, is necessary addition material organic like compost, fertilizer cage, and the rest plant For increase organic C content land as well as repair quality land in a way sustainable (Sari, 2023)

Based on results research at PT Perkebunan Nusantara IV Marjandi, organic C content land in 10 observation plots range between 1.20% to 2.61% with category low until moderate. Organic C content highest found in Plot 9 amounting to 2.61%, whereas lowest in Plot 1 at 1.20%. The difference The organic C value in each plot shows existence variation material organic land affected by conditions vegetation, management land, as well as the decomposition process material organic on site study (Yahya, 2020).

Organic C content more land tall show condition more land Good Because capable repair characteristic physical, chemical, and biological land. Apart from that, content material enough organic can increase ability land in store water and nutrients as well support activity microorganisms land. On a plot with more vegetation dense, organic C content tend more tall Because existence accumulation remainder vegetation and materials organic that experiences weathering (Yahya et al., 2020a).

With Thus, the C- organic content land own role important in guard fertility land and sustainability productivity land plantation coconut palm oil. Therefore that, is necessary effort management material organic in a way sustainable like addition compost, fertilizer cage, and return remainder plant For increase organic C content land as well as guard topsoil quality in plantation areas coconut palm oil.

Connection Topsoil Depth With Density Vegetation

Based on results research that has been done, known that density vegetation own connection to organic C content land in plantation areas coconut oil palm plantation at PT

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Perkebunan Nusantara IV Marjandi. Plot with more vegetation meeting tend own higher organic C- content tall compared plot with sparse vegetation. This is due to the large number of litter and remains plants undergoing decomposition so that add content material organic inside land (Pradiko et al., 2025)..

Condition dense vegetation also helps maintain humidity land as well as reduce rate erosion surface. The more tall biomass vegetation found in a land so the more big contribution material organically produced. With Thus, the existence of vegetation closing land is very influential to improvement quality land (Yahya et al., 2020b).

Research result This in line with research conducted by Endrik Nurrohman et al. (2018) who stated that vegetation own close relationship with organic C content land. The more tall density vegetation on a land so the more Lots litter and remains plants that experience decomposition so that content material organic land increased. Vegetation also helps guard humidity land and support activity organism land in the process of decomposition material organic (Theobroma et al., 2018)

Research result it also explains that high organic C- content capable increase quality land Because material organic functioning repair characteristic physical, chemical, and biological land. In addition, vegetation closing land can reduce erosion and maintaining stability structure land so that fertility land still awake. With Thus, the existence of vegetation is very influential to improvement organic C content and quality land on the land plantation and agriculture (Theobroma et al., 2018)

The Relationship between Soil Conservation Engineering and Topsoil Depth and Organic C-Content

Based on results research in plantation areas coconut palm oil at PT Perkebunan Nusantara IV Marjandi, engineering conservation land own connection to topsoil depth and organic C-content land. Application conservation land like use vegetation cover, reduction erosion, and management material organic help maintain topsoil layer so that it does not easy eroded by rainwater and flow surface. The topsoil layer is part the most fertile land because it is rich in nutrients and materials organic matter needed plant (Quirino et al., 2023).

Research result show that plot with more vegetation meetings and conditions conservation more land Good tend own topsoil depth and higher C - organic content tall compared to the plot with sparse vegetation. Vegetation closing land capable protect surface land from Power rainwater damage as well as help increase content material organic through litter leaves

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and roots plants that experience weathering. Conditions the cause structure land become more stable and fertile land still awake (Zuraidah, 2019).

In addition, the organic C content high ground show condition more land Good Because capable repair characteristic physical, chemical, and biological land. Content material enough organic can increase ability land in store water and nutrients as well support activity microorganisms land. Therefore that, management material organic like giving compost, fertilizer cage, and return remainder plants are very necessary For guard topsoil quality and improve organic C content land on the land plantation coconut palm oil.

Research result This in line with study (Ariyanti, 2017) which explains that organic C content land own connection close with condition topsoil layer. The more Good topsoil conditions then content material organic the land is also getting high. The topsoil layer is part the most land contain nutrients, residue material organic, and activity microorganisms that play a role important in the process of formation fertility land (Suwardi et al., 2022).. Therefore that, the existence of good topsoil really influences organic C- content in the soil plantation coconut palm oil (Ulén, 2020).

In addition, the topsoil layer that experiences damage consequence erosion or management less land Good can cause decline content material organic soil. Decrease in organic C land will impact on the decline ability land in save water, repair structure land, and provide nutrients for plants. With existence implementation technique conservation good soil, topsoil layer can be maintained so that organic C content land still stable and productive plant coconut palm oil can increased (Ariyanti, 2017).

CONCLUSION

Based on results research that has been carried out at PTPN IV Marjandi Regional II, can concluded that implementation technique conservation land own connection to condition topsoil depth, density vegetation, and organic C content soil in the plant area coconut oil palm. Topsoil thickness at the location study range between 27–34 cm with an average of 29.7 cm which indicates condition land Still Enough good. Vegetation weeds found consists of of 8 species with domination weeds leaf width, while organic C content land range between 1.20%–2.61% with category low until medium. Plot with vegetation more meeting tend own higher organic C-content high, so that show that conservation land and existence vegetation play a role important in guard fertility and quality land plantation coconut palm oil.

SUGGESTION

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It is recommended that the parties plantation Keep going increase implementation technique conservation land in a way mechanic and vegetative For reduce erosion and maintaining topsoil layer and content material organic land. Management vegetation and reclamation material organic like leaf stalk palm oil, compost, and waste plants also need done in a way sustainable use increase fertility land and maintain productivity plant coconut palm oil. In addition, research furthermore expected can add other parameters such as level erosion, humidity land, and properties chemistry land others to be obtained results further research complete and in-depth.

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