Proceeding of International
Conference on Science and Technology
Lembaga Penelitian Pengabdian kepada Masyarakat dan Dakwah Islamiyah, Universitas Islam Kuantan Singingi, Indonesia, November 10th 2022
DOI : https://doi.org/10.36378/internationalconferenceuniks.v0i0.2850
ISSN 2985-8739
Page: 96-98

Botanical Composition And Biomassa Production Of Forages In Sentajo Raya, Kuantan Singingi District Riau

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Abstract

This study aims to determine the type of forage that grows in Kuantan Singingi District. The research began with a survey (field observation and location determination) and then forages sampling in 5 Village, namely koto sentajo, kampung baru, muaro, pulau komang, geringging. Each District was taken 5 locations, each location was taken 4 point. Then proceed with the identification of the type forage. The tools used for forage sampling consisted of a 0.5 x 0.5 m2 quadrant, grass clippers, sickle, plastic bag size 10 and size 2 kg, sack, plastic rope, and stationery. Calculation of forage by percentage of forage, Calculation of forage production with the average of each village. The results showed that there were 11 types of forage, consisting of grass, legumes and weeds. The conclusion of this study is that the The most dominant forage growing in Sentajo Raya Subdistrict is of the type of grass/gramineae 82.01%, namely, Bede Grass (Brachiaria decumbens) 5.62% and Leguminosae 13.07%. The highest forage biomass production in the geringging 59.17 tons/ha/year. The highest nutrient content is 10.8 crude protein in the Kampung Baru.

Keywords: Forages, Botanical composition, Kuadran, Diversity,biomassa production.

1. Introduction

Sentajo Raya is one of the areas in the Kuantan Singingi Regency, RIAU. Mount Toar is an area with lots of hills and greenery. Forage is the main requirement of ruminants. Forage in Sentajo Raya District appears to be quite abundant along roads and rivers, but the type and amount of forage production is unknown. Forage greatly affects the productivity of livestock production. To obtain maximum production, the composition, type and ratio of forage in a field must be known. A land is said to be good if the ratio between forages, namely grass and legumes, is in accordance with nutritional standards. Botanical composition is a way to detect the amount of grass, legume and weed composition (Tana, 2015). Forage production in a field is also influenced by land conditions, management and season. Season affects forage production in a land (Muhajirin, 2017).

The productivity of forage in pastures is influenced by the availability of adequate land, where the land is able to meet the needs of livestock forage (Putra, 2018). In addition, seasonal fluctuations also have an impact and influence on livestock productivity (Umami, 2016).

Grass is the feed most needed by ruminants, good feed will have a good effect on livestock productivity. Many factors affect forage production, one of which is management. So that good management gives a lot of production compared to bad management. In addition, the factor causing low livestock production is the low quality of grazing land (Siba, 2017). The type of forage and the amount of forage that grows in Gunung Toar District is unknown. So it is necessary to do a study on the types of forages that grow in Sentajo Raya District in order to know the type and amount of forages that grow in the District. The purpose of this study was to determine the type and production of forage that grows in Sentajo Raya District.

2. Research Methods

Procedure

This research was conducted from June to August 2020 in five villages in Setajo Raya District, namely Kampung Baru, Muaro, Pulau Komang, Geringging. It begins with a survey to determine location points using a purposive sampling method (Fachrul, 2006).

Forages Sampling

Forage sampling consisted of 5 villages, each village was taken from 5 location points. Sampling with a quadrant (plate meter) measuring 0.5 x 0.5 m2. Quadrants are placed diagonally randomly at each selected point. Furthermore, all forage plants that are in the quadrant are cut as high as 5-10 cm from the ground surface or until they are snatched by cattle (Junaidi and Sawen 2010). The forages that have been cut are then put into a plastic bag, then tied and labeled. Furthermore, the forage is brought to the laboratory for weighing and analysis of the botanical composition and calculation of forage biomass production.

Calculation of Botanical Compsition

The botanical composition is calculated by weighing the fresh weight of the forage, then

analyzing the vegetation (identification of the botanical composition) of the plants by separating them based on the type of plant and then weighing them based on the type of plant. Forage identification is calculated based on the Muhajirin et al (2017) formula, namely each type of forage divided by the total weight of forage and multiplied by 100%. Then identify the type of forage and determine the name of the forage.

Calculation of Botanical Compsition

Calculation of forage biomass production by weighing the fresh weight of forage at the time of sampling. Forage that has been weighed fresh weight is calculated to get the product in forage biomass. Biomass production is calculated using the Infitria and Khalil formula (2014).

3. Results and Discussions

Identifiction of Forages

Based on the results of forage identification taken in Sentajo Raya District, there were five types of Gramineae, two types of leguminosae and three types of weeds. The types of forage in Gunung Toar District are shown in table.1. There are many types of forage in Sentajo Raya District. The large diversity of forages that grow in this sub-district is due to forage growing naturally in nature, and management factors. The number of forage species that grow in a field is caused by human management factors (Infitria, 2014).

The percentage of Bitter Grass Gramineae (Axonopus compressus) is more than that of other types of grass, namely 24.82, while the least is that of alang-alang grass 8.07. The type of bitter grass is commonly found in the Kampung Baru sub-district, namely 28.75, while in the Geringging sub-district, this type of grass is not found. Bede grass (Brachiaria decumbens) is easy to grow but also resistant to trampling and seasons. Muhajirin et al (2017) stated that B. decumbens grass is a type of pasture grass that has high nutrition and production, is resistant to dry seasons, and is resistant to stampede by livestock.

The availability of leguminous plants is very necessary in a pasture land because leguminous plants have a high nutritional value compared to grass plants. Leguminous plants in a field are needed because they have high nutrition compared to grass (Infitria and Khalil 2014). Based on the analysis of the percentage of legume plants, there are two types of legumes, namely centro (Centrocema Pubescens) and Putri Malu (Mimosa Pudica). The percentage of centro type legumes was more abundant in Patabahan Village, namely 42.92, while in Pisang Gerubus Village, centro type legumes were not found.

An increase in the proportion of grass and a decrease in the proportion of legumes in the field was caused by the presence of taller grass, especially B. decumbens grass, this is because leguminous plants are weak plants when mixed with grass (Tosti and Thorup-Kristensen 2010). Reinforced by Ali (2014) that interspecific competition between grass and leguminosae can reduce survival and inhibit the growth of subdominant plants (leguminosae).

A good ratio of forage and legumes in a pasture is 60:40%, 60 grass and 40% legumes. Forage that grows in Sentajo Raya District, the ratio between grass and legumes is 82.01:5.62%, this shows that the ratio of forage composition does not yet meet the composition category of good grazing land.

Table 1. The Type of Forages That Grows in Kecamatan Sentajo Raya

No	Jenis Hijauan	Desa					Rataan
	Gramineae	**KS**	**KB**	**M**	**PKM**	**GR**	
1	Bede (*Brachiaria decumbens*)	0,00	0,00	19,44	28,75	2,53	**20,13**
2	Rumput Benggala (*Panicum Maximum*)	0,00	0,00	0,00	0,00	30,95	**9,42**
3	Rumput Pahit (*Axonopus Compresuss*)	48,18	50,00	13,89	15,00	0,00	**24,82**
4	Rumput Alang-alang (*Imprets Cylindrica (L) Beauu*)	0,00	0,00	0,00	18,75	14,58	**8,07**
5	Rumput Teki (*Ciperus rotundusi* L)	0,00	0,00	25,00	47,75	22,41	**18,92**
	Jumlah	**25,00**	**15,91**	**42,16**	**62,50**	**67,06**	**82,01**
	Leguminosa						
6	Centro (*Centrocema Pubescens*)	5,13	33,39	42,92	16,67	0,00	**0,65**
7	Putri Malu (*Mimosa Pudica*)	0,00	0,00	0,00	0,00	9,13	**4,97**
	Jumlah	**5,13**	**33,39**	**42,92**	**16,67**	**9,13**	**5,62**
	Gulma						
8	Calincing (*Oxallis Barrelieri*)	0,00	0,00	0,00	0,21	5,81	**5,57**
9	Gulma Siam (*Chromolaena Odorata*)	0,00	0,70	0,92	0,00	0,00	**0,67**
10	Pakis (*Cyclosorus parathelyptens*)	0,00	0,00	0,00	0,00	2,18	**5,00**
11	Sikaduduk (*Melastoma malabatricum*)	9,17	0,00	0,00	0,00	0,00	**1,83**
	Jumlah	**69,87**	**50,70**	**14,92**	**20,83**	**23,81**	**13,07**

Ket : KS (Koto sentajo), KB (Kampung baru), M(muaro), PKM (Pulau Komang), GR(Geringging),

Biomass Production and Carriyig Capacity

Calculation of the biomass production of a land needs to be done to determine the forage production per day, month or year. The results of the study showed that the highest biomass production in Sentajo Raya District was found in the Geringging sub-district, namely 59.17 tons/ha/year, while Pulau Komang Village had the lowest biomass production, namely 34.33 tons/ha/year. The level of production of a land is influenced by the location, soil fertility, climate and weather. Geringing Village is in the highest order of biomass production because Geringging Village is the blood of agriculture and plantations resulting from the remaining fertilization of a plant will affect soil fertility so that the forage will get the day element from the remaining fertilization. Muhajirin 2017 stated that the season affects the production of biomass and the nutritional quality of forage. Natural forage production also relatively decreases in the dry/dry season so that it will directly affect livestock productivity.

Biomass production has an influence on storage capacity. High biomass production will also get a high storage capacity. This is shown in table 2 that the Kelurahan which has high biomass production has a high carrying capacity, namely Geringging Sub-District as much as 44.58 UT/ha/year. Whiteman et al. 1974 Growth and production of forage influenced forage, climate, species and management.

Table 2. Biomas Production and Carriying Capacity in Sentajo Raya

Parameter	Satuan	KS	KB	M	PKM	GR
Biomassa Production	Kg/Ha/y	44138	447482	45619	34327	59170
	Ton/Ha/y	44,13	47,48	45,61	34,33	59.17
Carriying Capacity	UT/Ha/y	3,32	3,49	3,42	2,32	4,58

Ket : KS (Koto sentajo), KB (Kampung baru), M(muaro), PKM (Pulau Komang), GR(Geringging)

4. Conclusion

The conclusion of this study is that the The most dominant forage growing in Sentajo Raya Subdistrict is of the type of grass/gramineae 82.01%, namely, Bede Grass (Brachiaria decumbens) 5.62% and Leguminosae 13.07%. The highest forage biomass production in the geringging 59.17 tons/ha/year. The highest nutrient content is 10.8 crude protein in the Kampung Baru.

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