

**PENGARUH UMUR PEMOTONGAN DAN VARIETAS SORGUM YANG DITANAM
DALAM PASTURA STYLOSANTHES TERHADAP PRODUKSI, KANDUNGAN
NUTRIEN, FRAKSI SERAT, DAN ASAM PRUSIK**

INTISARI

Meita Puspa Dewi
16/407586/PPT/00967

Penelitian ini bertujuan untuk mengetahui pertumbuhan, produksi, kandungan nutrisi, asam prusik, dan fraksi serat pada dua varietas sorgum yang ditanam dalam pastura stylosanthes pada umur pemotongan yang berbeda. Penelitian ini menggunakan rancangan petak terbagi (*split-plot design*) yang mana varietas sorgum BMR (*brown midrib resistance*) dan super sebagai *main plot* dan umur pemotongan (6, 8 dan 10 minggu) sebagai *sub plot*, masing-masing dengan 3 ulangan. Biji sorgum disemaikan selama 12 hari sebelum ditanam dalam pastura stylosanthes umur 30 hari yang ditanam dengan jarak 25 x 25 cm, sedangkan jarak tanam sorgum 75 x 25 cm. Variabel yang diamati meliputi tinggi tanaman, jumlah tunas, rasio batang dan daun, produksi (bahan kering, bahan organik dan protein kasar), bahan kering (BK), bahan organik (BO), protein kasar (PK), serat kasar (SK), lemak kasar (LK), *neutral detergent fiber* (NDF), *acid detergent fiber* (ADF), lignin serta kandungan asam prusik. Data penelitian dianalisis dengan analisis variansi mengikuti *split-plot design*, uji perbedaan antar rerata dilakukan dengan Duncan's Multiple Range Test (DMRT). Sorgum BMR memiliki tinggi tanaman, jumlah tunas, BK, rasio batang dan daun, NDF, produksi BK, dan BO lebih tinggi ($P < 0,05$) dibandingkan sorgum super. Kandungan asam prusik, ADF, dan lignin sorgum BMR lebih rendah ($P < 0,05$) dibandingkan dengan sorgum super. Semakin tinggi umur pemotongan meningkatkan ($P < 0,05$) tinggi tanaman, rasio batang dan daun, kandungan BK, BO, SK, LK, NDF, ADF, dan lignin serta produksi BK dan BO, selain itu mampu menurunkan ($P < 0,05$) kandungan asam prusik dari 727,34 mg/kg menjadi 241,71 mg/kg. Protein kasar menurun ($P < 0,05$) sejalan dengan semakin tuanya umur pemotongan. Berdasarkan hasil penelitian dapat disimpulkan bahwa semakin tua umur tanaman maka kandungan fraksi serat, produksi BK, dan BO meningkat, namun menurunkan kandungan protein kasar dan asam prusik. Sorgum BMR memiliki pertumbuhan, kandungan nutrisi, dan produksi lebih tinggi dibanding varietas super dengan kandungan lignin lebih rendah. Sorgum BMR dengan umur pemotongan 8 minggu mempunyai produktivitas dan pertumbuhan tertinggi dengan kandungan asam prusik 454,71 mg/kg.

Kata kunci: Asam prusik, Fraksi serat, Kandungan nutrisi, Sorgum BMR, Sorgum Super, Pertumbuhan, Produksi, Umur Potong.

THE EFFECT OF CUTTING INTERVAL AND SORGHUM VARIETIES PLANTED
IN STYLOSANTHES PASTURE ON PRODUCTION, NUTRIENT CONTENT,
FIBER FRACTION, AND PRUSSIC ACID CONTENT

ABSTRACT

Meita Puspa Dewi
16/407586/PPT/00967

This study was aimed to determine the effect of cutting interval and sorghum varieties planted in stylosanthes pasture on production, nutrient content, fiber fraction, and prussic acid content. This design of the study was split-plot design which brown midrib resistance (BMR) and super sorghum as main plots and cutting interval of 6, 8 and 10 weeks as sub plots with three replications. The seed was germinated for 12 days prior to be planted on the 30 days stylosanthes pasture which was planted with planting space of 25 x 25 cm, while planting space for sorghum was 75 x 25 cm. The variables observed were plant height, number of shoots, stem and leaf ratio, production (dry matter, organic matter, and crude protein), dry matter (DM), organic matter (OM), crude protein (CP), crude fiber (CF), ether extract (EE), neutral detergent fiber (NDF), acid detergent fiber (ADF), lignin, and prussic acid contents. Data obtained were statistically analyzed using analyse of variance as split-plot design and continued with Duncan's new multiple range test for any differences detected. Sorghum of BMR variety had plant height, number of shoots, DM, stem and leaf ratio, NDF, DM, and OM production was higher ($P < 0.05$) than super variety. Prussic acid content, ADF, and lignin of BMR sorghum were lower ($P < 0.05$) than super sorghum. The higher cutting interval increased ($P < 0.05$) plant height, stem and leaf ratio, content of DM, OM, CF, EE, NDF, ADF, lignin, and production of DM and OM, and was able to reduced ($P < 0.05$) prussic acid content from 727.34 mg/kg to 241.71 mg/kg. Crude protein decreased ($P < 0.05$) in line with the increasing of cutting interval. Based on the results of the study it can be concluded that the longer cutting interval, increased fiber fraction content, production DM and OM, but decreases the crude protein and prussic acid content. Sorghum of BMR variety had a higher growth, nutrient content and production than super variety with lower lignin content. *Brown midrib resistance* (BMR) variety with cutting interval of 8-weeks had higher productivity and growth rate, and prussic acid content 454,71 mg/kg.

Keywords: Prussic acid, Fiber fraction, Nutrient content, BMR sorghum, Super sorghum, Growth, Production, Cutting interval.