

## Feasibility of Ratoon System Sorghum Cultivation Technology

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Abstract. Sorghum is a versatile crop that can be used as a source of food, feed, and industrial raw materials. Cultivation of sorghum as a drought-resistant plant, it is necessary to improve its cultivation technology to get optimal results. Increasing the cultivation of sorghum with the ratoon system technology is a practical technology and can reduce production costs, be efficient in labor and time, as well as additional income from its production because the results obtained are more than one harvest. In this regard, a study was conducted to determine the economic feasibility of the ratoon system cultivation technology to support the development of sorghum. The study was conducted at the Bajeng Experimental Garden, Gowa Regency, South Sulawesi in March-October 2019. Sorghum plants planted on marginal land as the main crop were arranged according to a split-split plot design with 3 replications with a spacing of 75 cm x 20 cm (66,666 plants) /Ha). The ratoon plant used a split-split plot design, the main plot consisted of two mulches: M1= no mulch + 50% dose of main crop fertilization and M2= sorghum stover mulch + Biodecomposer 1 kg/ha without NPK fertilizer. The sub-plots consisted of 2 populations: P1=66,666 plants/ha, P2=133,330 plants/ha; and sub-sub plots consists of 5 (five) genotypes/varieties of sorghum: V1= Numbu, V2= No.58-1, V3= No. 86.1, V4= No.103-1, V5=No. 113-1, so that 20 treatment combinations were obtained with 3 replications. The results showed that the five sorghum genotypes/varieties tested sorghum produce of 5.98-6.45 t/ha with an income of Rp. 11.96-12.90 million/ha and a profit of around Rp. 4.00-4.86 million with farming efficiency showing R/C value 1.50-1.60. The yield of ratoon sorghum is 5.03-5.25 t/ha with a profit of Rp. 6.99-7.39 million, the R/C value 3.27-3.38 and the cost/kg seed ratio by lower around (Rp. 592-611) from cost/kg seed ratio of main crop (Rp.1,247-1,331). Cultivation of the ratoon system with 2 harvests obtained a total income of Rp. 22.02-23.40 million of the production reached 11.01-11.70 t/ha and the profit received was Rp. 10.99-12.25 million/ha, R/C value 2.00-2.10 and MBCR value 2.27-2.38. Thus, the ratoon system cultivation technology has greater advantages, so it is feasible to be applied for the development of sorghum.

**Keyword: ROA, EPS, NPM, DER and stock price**