

# Production of profit-basis forage crops – Sweet Sorghum and Avena: III. Economic benefit evaluation and SWOT analysis of regional rotation production modes <sup>(1)</sup>

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## Abstract

The objective of this experiment was to evaluate the economic benefits of different crop rotation production modes in various regions in Taiwan, and to analyze the management strategies of domestic forage production. These six forage rotation production modes were proposed as follows: Fuxing Township of Changhua County, A. Paddy rice (*Oryza sativa* L.)- sweet sorghum (*Sorghum bicolor* (L) Moench)- precocious oat (*Avena strigosa* Schreb.) and B. manure soybean (*Glycine max* L.)- sweet sorghum- late maturing oat (*Avena sativa* L.); Yenshui District of Tainan City, C. sweet sorghum- manure soybean- silage corn (*Zea mays* L.) and D. manure soybean- sweet sorghum- late maturing oat.; Luye Township of Taitung County, E. manure soybean- rice- precocious oat and F. manure soybean- sweet sorghum- late maturing oat. After two years of successful operation and investigation research, the results showed that the six crop rotation modes could indeed be applied to various regions for implementation. In terms of the average output values, the highest value was paddy rice with 137,529 NTD (New Taiwan Dollars)/ha, followed by oat Swan with 87,033 NTD/ha, and then followed by sweet sorghum with 76,909 NTD/ha, while oat Saia with 45,120 NTD/ha was the lowest output value among all crops. In terms of average total income, sweet sorghum yielded the highest with 65,009 NTD/ha, followed by rice with 41,328 NTD/ha, and oat Swan with 41,033 NTD/ha, indicating that the cultivation of sweet sorghum and oat Swan might be possible to increase revenue. Except for Mode B (151,913 NTD/ha) in Fuxing Township, Changhua County, which had lower annual average total income than that of Mode A (152,876 NTD/ha). All other regions adopting the crop rotation mode specializing in the production of forage crops (Mode D and F) had higher annual averaged total income. It indicated that the economic benefits of forage crops production were higher. On the other hand, the analysis of this report suggested that domestic forage oats had the economic potential and market advantages. It was suggested that forage oats could be included into the forage production rotation modes to produce forages, which might help improve the short age of domestic forage in winter.

Key words: Forage, Production, Economic, Benefits.

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