Department of
Agricultural and Resource Economics

Tennessee Forage Budget Calculator

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A wide range of annual and perennial forage crops can be produced in Tennessee, which are often utilized for grazing or harvesting for hay. The Tennessee forage budget calculator was developed to assist producers in estimating the cost of producing forage under various scenarios. Users select a forage type, harvest method (pasture, hay or baleage), bale type and bale size, number of cuttings and storage method. The user can adjust input prices as needed to reflect the prices expected for a specific operation. This tool allows users to evaluate potential returns and how these returns may vary with changes in yields and prices using the enterprise budget generated and sensitivity analysis.

Disclaimer

The enterprise budgets provide estimates based on assumptions and current market prices and should not be relied upon as a reflection of all circumstances. Seeding rates, fertilizer, lime, and weed control applications are representative of typical operations in Tennessee after proper testing and following current University of Tennessee Extension recommendations. Recommendations are current at the time of publication and will be updated regularly; however, recommendations for agricultural inputs including pesticide registrations may be updated and inclusion in the budget should not be interpreted as a recommendation for use. Consult a county Extension agent for current seeding rates, soil amendments and weed control recommendations. For a more accurate estimate of fertilizer and lime expenses, input recommendations from a current soil sample into the budget generator. Budget expenses for all inputs are based on average current prices from agricultural suppliers across the state. As significant regional and seasonal price variability may exist, the provided budgets are intended to be used as a tool to assist producers in making informed decisions and annual plans. Users should adjust the inputs, prices, and processes to reflect a specific field or enterprise to improve the accuracy of the budget calculations.

***Figure 1.** As farmers seek to manage their operations to maximize profitability, the forage budget calculator can be used annually as a risk management tool.*

Methods and Assumptions

The forage budget calculator estimates income, variable expenses and fixed expenses for various forages commonly produced in Tennessee. Assumptions for each forage type are included on the generated budget page. As annual forages are grown for three to six months as a cool season or warm season crop, all establishment costs of these annual crops are included in the crop budgets. For perennial forages, the establishment costs are spread over six years as a default option for baled hay and 10 years for pasture, but a user may change these to better-reflect the predicted production life for a specific operation. Pasture budgets do not include fencing costs, as expenses would vary depending on materials used, field size and arrangement. Pasture budgets assume continuous grazing management; therefore, estimates include lower levels of labor, management and production than if harvested for baled hay. Rates for machinery and management including labor, operating, maintenance and ownership costs were developed with input from forage producers in custom rate survey responses, Extension agents and specialists and agricultural suppliers across Tennessee. Storage loss rates are based on an average loss of studies from the University of Georgia (Hancock) and the University of Tennessee (Moorehead).

Accessing and Utilizing the Budget Generator

The Tennessee forage budget calculator is an Excel spreadsheet available on the University of Tennessee Department of Agricultural and Resource Economics website at arec.tennessee.edu/extension/decision-aid-tools/.

When opening the Excel spreadsheet, the user will find the “Introduction” page, which includes instructions and information regarding security settings that may need to be enabled for the calculator to function properly. To begin, select the “Get Started” button on the bottom of the introduction page to access the budget generator. On the “Forage Budget Generator” page, answer the questions using the drop-down selection options to reflect implemented practices on a particular enterprise or potential management practices to develop a budget based on the selected scenarios. If a soil test for the field has been completed, override the default application rates provided to reflect the test result recommendations. Select the “Generate Budget” button to continue. A budget will be calculated based on the selected options and input prices used. Perennial budgets will include an annual maintenance table and an establishment table below. Additionally, for hay and baleage budgets, a sensitivity analysis will be provided to the right to examine the effects to returns based on changes in yields (tonnage) and prices (cost per bale). On the budget page, any values in light blue can be modified. A summary of the generated budget can be printed or saved by selecting the “Print” button on the budget page. If input prices or values on the generated budget have been modified, the “Reset Defaults” button can be selected to restore original values. If input prices need to be adjusted, select the “Input Price List” button on the Forage Budget Generator page to continue to the “Input Price” page. Default prices reflect estimated current averages in Tennessee. Modify the values in light blue or proceed to generate budget with provided prices and estimates if accurate values are unknown.

Users should note that input prices and all estimates included in the budget may vary considerably and are current as of the version date on the Introduction page and are subject to change.

Farm management specialists are available for individual consultation and assistance utilizing enterprise budgets and decision-aid tools including the forage budget generator. Find more information including contact information at manage.tennessee.edu.

References

Hancock, D. (2010, February). Hay storage methods for keeping costs low. Georgia Cattleman. The University of Georgia.

Moorehead, L. (1991). Moore County Round Bale Storage Demonstration. UT Extension. The University of Tennessee.

Online Resources

UT Extension publications:

D252-B Tennessee Forage Budgets: Baleage

D252-C Tennessee Forage Budgets: Hay

D252-D Tennessee Forage Budgets: Pasture

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