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Long-Term Production and Profitability From Grazing Cattle in the Northern Mixed Grass Prairie

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Abstract

Conventional wisdom among rangeland professionals has been that for long-term sustainability of grazing livestock operations, rangeland should be kept in high good to low excellent range condition. Our objective was to analyze production parameters, costs, returns, and profit using data generated over a 34-yr period (1969–2002) from grazing a Clayey range site in the mixed-grass prairie of western South Dakota with variable stocking rates to maintain pastures in low–fair, good, and excellent range condition classes. Cattle weights were measured at turnout and at the end of the grazing season. Gross income $\cdot$ ha^{-1} was the product of gain $\cdot$ ha^{-1} and price. Prices were based on historical National Agricultural Statistics Services feeder cattle prices. Annual variable costs were estimated using a yearling cattle budget developed by South Dakota State University agricultural economists. All economic values were adjusted to a constant dollar using the Bureau of Labor Statistics' Consumer Price Index. Stocking rate, average daily gain, total gain, net profit, gross revenue, and annual costs $\cdot$ ha^{-1} varied among range condition classes. Net income for low–fair range condition ($27.61 $\cdot$ ha^{-1}) and good range condition ($29.43 $\cdot$ ha^{-1}) were not different, but both were greater than excellent range condition ($23.01 $\cdot$ ha^{-1}). Over the life of the study, real profit (adjusted for inflation) steadily increased for the low–fair and good treatments, whereas it remained level for the excellent treatment. Neither drought nor wet springs impacted profit differently for the three treatments. These results support generally observed rancher behavior regarding range condition: to maintain their rangeland in lower range condition than would be recommended by rangeland professionals. Ecosystem goods and services of increasing interest to society and associated with high range condition, such as floristic diversity, hydrologic function, and some species of wildlife, come at an opportunity cost to the rancher.

Resumen

La experiencia de los profesionales en manejo de pastizales ha mantenido desde hace mucho tiempo la sostenibilidad de de los ranchos con pastoreo de ganado, en los cuales el mantener los agostaderos en condición buena o excelente ha sido una de las prioridades. El objetivo de este estudio fue analizar los parámetros de producción, costos, retornos, y rentabilidad utilizando 34 años de datos (1969–2002) de pastoreo de un sitio de pastizal con suelos arcillosos en la pradera mixta del oeste de South Dakota con una carga animal variable para mantener los potreros en condición regular-pobre, buena, y excelente. El ganado se peso al inicio y final de cada temporada de pastoreo. Los ingresos brutos $\cdot$ ha^{-1} se calcularon multiplicando la ganancia de peso $\cdot$ ha^{-1} por el precio. Los precios utilizados se tomaron de los archivos del National Agricultural Statistics Services para la alimentación de bovinos de carne. Los costos variables por año se estimaron utilizando el programa de yearling cattle budget desarrollado por economistas agrícolas de la Universidad de South Dakota. Todos los valores económicos se actualizaron los datos del Bureau of Labor Statistics' Consumer Price Index. La carga animal, la ganancia diaria promedio, ganancia total, ganancia neta, ingresos brutos, y costos anuales $\cdot$ ha^{-1}, variaron entre las diferentes condiciones de pastizal. El ingreso neto para la condición pobre-regular ($29.43 $\cdot$ ha^{-1}) y la condición buena no fueron diferentes, pero ambos fueron superiores a la condición excelente ($23.01 $\cdot$ ha^{-1}). Durante el transcurso del estudio, la ganancia real (ajustada por inflación) incremento en forma constante para los tratamientos de condición pobre-regular y la condición buena, mientras que se mantuvo constante para la condición excelente. La sequía o abundancia de lluvias en la primavera no afectó la ganancia en ninguno de los tratamientos. Estos resultados justifican el comportamiento general de los ganaderos para mantener los agostaderos en condición pobre en contra de las recomendaciones de los profesionales en manejo de pastizales. El interés público por l os beneficios y servicios al ecosistema que se incrementan cada mas en la sociedad y asociados con una condición de pastizal alta tales como diversidad florística, función hidrológica, y cobertura para la fauna, representan un costo de oportunidad para los ganaderos.

Key Words: livestock grazing, profit, range condition, stocking rate, variable stocking

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