

Surachai Piamkhla 2007: A Comparative Study Effects of the Utilization of the Pangola Grass (*Digitaria eriantha*) and Water Convolvulus Straw (*Impomoea aquatica Forsk*) as Roughage Source in Finishing the Kamphaengsean Beef Steer. Master of Science (Animal Production), Major Field: Animal Production, Department of Animal Science. Thesis Advisor: Associate Professor Chainarong Kantapanit, Ph.D. 59 pages.

This study was to determine performance, carcass quality and economic return of 16 Kamphaeng saen (KPS) beef steers. The experiment followed Randomized Complete Block Design: RCBD by arranging the steers into groups/each group divided into 4 replications and each replication containing 4 steers according to types of roughage for fattening. The first control group was fattened with Water Canvolvulus Straw as a roughage, the second with fresh Pangola, the third with Pangola silage and the fourth with Pangola hay. Mean while, all groups of steers were fed with the same amount and formula of concentrate. The purpose of this thesis was to study the steers' performance such as average daily gain (ADG), feed conversion ratio (FCR), dry matter intake (DMI), carcass quality (QC) and economic return (ER) from fattening. The experimental results revealed that ADG and FCR of each group of steers differed with no statistical significance ( $P>0.05$ ). Thus, ADG (0.62 0.71 0.67 and 0.69 Kg/day) and FCR (13.39 14.21 13.67 and 14.17). As for DMI, difference with statistical significant ( $P<0.05$ ) was found. Thus, DMI of the 1<sup>st</sup> group differed from that of the 2<sup>nd</sup>, and the 4<sup>th</sup> but did not differ from that of the 3<sup>rd</sup>: the 1<sup>st</sup> group showed the least DMI: 7.83 Kg/day (1.98%BW) near the DMI of the 3<sup>rd</sup>: 8.6 Kg/day (1.77%BW) whereas the 4<sup>th</sup> group showed the most DMI: 9.70 Kg/day (1.98%BW) close to the DMI of the 2<sup>nd</sup>: 9.66 Kg/day (1.98%BW). The experimental results showed carcass quality, it was found that carcass percentage (58.46, 56.64, 56.74 and 58.66 %), loin eye area (12.53, 11.48, 11.43 and 11.18 in<sup>2</sup>), back fat thickness (2.00, 1.85, 1.58 and 1.43 cm.), meat color (2.25, 2.25, 2.00 and 1.75) and beef tenderness by Warner Bratzler shear force (2.86, 2.69, 2.54 and 2.29 kg.) was no significantly difference ( $P>0.05$ ) with. As for the results marbling score the 1<sup>st</sup> group had the highest marbling score of 3.50 which was highly significantly different ( $P<0.01$ ) similar to groups those of the 2<sup>nd</sup>, the 3<sup>rd</sup> and the 4<sup>th</sup> group with 3.13, 3.00 and 2.88 respectively. The meat samples were not significantly difference ( $P>0.05$ ) of tenderness, juiciness, flavor and overall satisfaction. The result of economic return revealed that primary economic return from fattening KPS beef steers. The 1<sup>st</sup> group had the highest economic return of 5,974.03 bath/steer followed by the 4<sup>th</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> of 5,501.85, 3,448.98 and 1,040.35 bath/steer, respectively.



Student's signature



Thesis Advisor's signature

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