



Research article

Quality, productivity and profitability of diversified fodder-based cropping systems for year-round fodder production in Indo-gangetic plains of India

R.K. Meena^{*}, P.S. Hindoriya, Rakesh Kumar, Hardev Ram, Magan Singh and Dinesh Kumar

ICAR-National Dairy Research Institute, Karnal-132001, India

^{*}Corresponding author e-mail: rajeshkumar2793@gmail.com

Received: 15th March, 2022

Accepted: 18th January, 2023

Abstract

An experiment was conducted during two consecutive years of 2017-18 and 2018-19 at National Dairy Research Institute, Karnal under randomized complete block design (RCBD) with three replications. This study aimed to evaluate the performance of eight fodder-based cropping systems (CS) in Indo-gangetic plain region (IGP) viz., sole napier bajra hybrid (CS₁), sole guinea grass (CS₂), napier bajra hybrid + cowpea (*Kharif*)/berseem (*Rabi*) (CS₃), guinea grass + cowpea (*Kharif*)/oats (*Rabi*) (CS₄), multicut sorghum-berseem (*Rabi*) (CS₅), cowpea-maize-oats (CS₆), baby corn-cowpea-chinese cabbage (*Rabi*) (CS₇), summer moong-multicut sorghum-ryegrass (*Rabi*) (CS₈). The results revealed that selection of the crops in different cropping systems significantly influenced green fodder yield and fodder quality. Among various fodder base cropping systems, NBH + cowpea/ berseem system was recorded with significantly higher green fodder (177 t/ha/year) and dry fodder (31.5 t/ha/year) yields and also fodder quality attributes. The highest crude protein yield (40.7 q/ha/year) was also recorded in NBH + cowpea/ berseem intercropping system. In terms of economics, the highest gross and net returns were obtained from baby corn-cowpea-chinese cabbage (Rs 3.15 and 2.40 lakh/ha/year, respectively), closely followed by NBH + cowpea/ berseem (Rs 2.74 and 2.15 lakh/ha/year, respectively). To ensure the year-round availability of quality fodder for dairy-based farmers, cultivation of the NBH + cowpea/ berseem cropping system proved to be a viable option.

Keywords: Baby corn, Berseem, Crude protein, Diversified fodder production, Napier bajra hybrid