Evaluation of Dandelion as a Potential Forage Species in Mixed-Species Swards

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Abstract

Recent research has indicated that increasing species diversity of the pastures might improve sward productivity and stability. The present experiment evaluates the effect of dandelion (*Taraxacum officinale* Weber) as a potential pasture species on the performance of a perennial ryegrass (*Lolium perenne* L.)–white clover (*Trifolium repens* L.) mixture in terms of total herbage yield, weed infestation, and nitrogen (N) yield in a replacement-series experiment over three harvest years. The three species were grown in monocultures and in all possible binary and three-species mixtures under two N fertilization levels (0 and 200 kg N ha^{-1}). Herbage yield and N yield of the three-species mixture were not significantly different from the ryegrass–white clover mixture over the 3 yr. The contribution of dandelion to the total herbage yield increased over years, which improved yield stability. A competition analysis, performed by calculating relative yield and relative yield total, indicated that ryegrass had a competitive advantage over white clover in fertilized and unfertilized swards, but over dandelion only when the sward was fertilized. Nitrogen application reduced the nonsown species yield in all mixtures, except that of white clover–dandelion. Our results indicate that dandelion might have the potential of contributing to herbage yield, nutritive value, and resistance to invasions of ryegrass–white clover pastures.