Start | View At a Glance | Author Index

237-3 Total and Monthly Yield of Annual Ryegrass and Arrowleaf Clover Grown In Pure and Mixed Stands with or without Nitrogen Fertilization In Southeastern Brazil.

Poster Number 939

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The adoption of cool season grasses such as ryegrass has become increasingly common in Brazil as an alternative to take advantage of idle cropland in autumn/winter. However, to obtain high yields of these grasses N supply is needed. One economical way to accomplish this is by the intercropping with annual legumes such as clovers. The objective of this study was to evaluate the total and monthly yield of annual ryegrass (*Lolium multiflorum* Lam.) and arrowleaf clover (*Trifolium vesiculosum* Savi) grown in pure and mixed stands with or without N fertilization under irrigation in southeastern Brazil. The trial was set in a completely randomized design with treatments corresponding to the combination of crops in pure or mixed stands, with or without nitrogen fertilization in a factorial arrangement with four replications. Over 167 days of the experimental period (1 May to Oct 15, 2010) fertilized ryegrass and the mixture yielded an average 11.7 Mg DM ha^{-1}, compared to 7,6 Mg DM ha^{-1} of fertilized clover, and 6,2 Mg DM ha^{-1} of all non-fertilized stands. Both the mixture and the fertilized ryegrass showed a narrower yield range over harvests, from 1.3 to 2.3 Mg DM ha^{-1} for ryegrass and from 1.6 to 2.4 for the mixture, although this was almost exclusively ryegrass. Fertilized and unfertilized clover, showed a very erratic production pattern over the season, alternating productive and unproductive harvests, possibly related to the harvest schedule. Unfertilized pure ryegrass and unfertilized mixed stand (also almost exclusively ryegrass), yields decreased progressively from 1.6 Mg DM ha^{-1} in the first harvest to 0.6 Mg DM ha^{-1} in the last ones. The use of pure or intercropped legume was not a good alternative, since the production of pure legume was low, and in the mixture it practically disappeared over the season. Fertilized ryegrass seems to be the best alternative for cool-season annual forage production, because yields are high and well distributed.

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<< Previous Abstract | Next Abstract >>