Phosphorus budgets and surface water quality of subtropical pastures. (S11-bohlen212010-Oral)

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Abstract:

Better nutrient management to reduce non-point source pollution requires an understanding of nutrient input-output budgets and how they change through time under various environmental conditions and production scenarios. From 1999-2001 phosphorous input-output data were collected for pastures in a large-scale project at the MacArthur Agro-ecology Research Center set up to investigate the influence of cow-calf stocking density (control, low medium, high) on nutrient loads in surface runoff in the Lake Okeechobee basin in south central Florida. In each year there was a net export of P from the pastures. Export of P in calves averaged 1.14, 1.46 and 2.32 kg per ha in the low, medium and high stocking density treatments, respectively. Export of P in calves was 20- to 30-fold greater than P export in surface runoff in a drought year, but was nearly equal to or less than P export in surface runoff in a normal rainfall year. Net export of P in calves increased with increasing stocking density, but overall exports were small relative to P accumulated in soils of improved pastures from past P fertilizer use.

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Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 10:30 am

Keywords:

water quality, phosphorus budgets, pasture and rangeland, beef cattle cow-calf production