# Nitrogen Impacts on Legume Persistence and Pasture Productivity in Grass/Legume Pastures. (C06cuomo071603-Oral)

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### Abstract:

Can nitrogen be used to increase pasture productivity without reducing legume stands? Mixtures of alfalfa, kura clover, and birdsfoot trefoil were established with either smooth bromegrass or reed canarygrass in 1998 in a rotationally grazed pasture. N was applied at 56, 112, 224, or 336 kg ha-1 in spring, fall, or split application. Legume stands were monitored from 1999 through 2002. By the fourth year, legume stands were similar in reed canarygrass (64%) and smooth brome (62%). Alfalfa was more prevalent in smooth brome (21%) than kura clover (16%). In reed canarygrass, kura clover was more prevalent (46%) than alfalfa (40%). By the forth year, alfalfa had started to decline, whereas kura clover stands were still increasing. Birdsfoot trefoil density averaged less than two percent. Legume stands were good across N treatments (>55%), but legumes were more persistent when no N was applied. In smooth bromegrass/legume treatments, forage mass declined from 1999 through 2001 and the impact of N became more pronounced. This decline in productivity may indicate a tradeoff between the persistence of kura clover and the productivity of alfalfa.

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