Phosphorus and Potassium Effects on Alfalfa Shoot Regrowth and Root Physiology. (C02-cunningham133504-Poster)

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Abstract:

Our objective was to determine why addition of phosphorus (P) and/or potassium (K) fertilizer increases shoot initiation and shoot regrowth rates after alfalfa defoliation. A factorial arrangement of P (0 and 75 kg/ha) and K (0 and 400 kg/ha) treatments was replicated four times. Roots were sampled immediately after defoliation in late June, and 1, 3, 6, 10, 14, 21, and 30 days after cutting. Addition of P and K increased forage yield by increasing mass/shoot. Stored reserves (sugar, starch, buffer-soluble protein, and amino nitrogen pools), gene expression patterns (P transporters, vegetative storage proteins), and protein profiles are being analyzed in taproot tissues to determine how reserve use and gene expression are altered by P and K during shoot regrowth.

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