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Productivity and persistence of Kura clover-grass mixtures

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Key words : botanical composition, Caucasian clover, persistence, *Trifolium ambiguum* M. Bieb., yield

Introduction There is currently a need for persistent forage legumes that could be used in permanent pastures of eastern Canada. Species currently used all lack persistence when grazed. Kura clover (KC, *Trifolium ambiguum* M. Bieb.) is a rhizomatous species which potential has been reported in several regions (Laberge and Seguin, 2005). Exceptional persistence and high forage quality are characteristics making KC a good candidate for use in permanent pastures (Laberge and Seguin, 2005). An experiment was established to compare KC and white clover (WC, *T. repens* L.) contributions to total forage yield in post-seeding years when mixed with different grass species and determine if KC could be used to establish desirable legume-grass swards in permanent pastures of eastern Canada.

Materials and methods Plots were established in 2003 and 2004 in Sainte-Anne-de-Bellevue (45°25' N, 73°56' W) and Normandin (48°51' N, 72°32' W), QC, Canada. Treatments included solo-seeded KC and WC, and mixtures of each clover species with smooth bromegrass (SBG, *Bromus inermis* Leyss), Kentucky bluegrass (KBG, *Poa pratensis* L.), timothy (TIM, *Phleum pratense* L.), orchard grass (ORC, *Dactylis glomerata* L.), tall fescue (TF, *Festuca arundinacea* Schreb.), and meadow bromegrass (MBG, *Festuca pratensis* Schreb.). Total forage yield and clover, grass, and weed yield contributions were determined from 2004 to 2007 inclusively. Plots were harvested approximately every 30 days, resulting in 3 or 4 harvests per year.

Results and discussion Results from a total of 14 sites—years clearly demonstrate KC potential in eastern Canada. In the first post-seeding year, clover and total forage yield of KC and KC-grass mixtures were similar or slightly lower than those of WC (Figure 1). However, from the second post-seeding year, yields were greater for KC and almost all KC-grass mixtures than similar WC treatments. WC contribution to total forage yield in mixtures was often negligible in the fourth post-seeding year, compared to almost 50% for KC. KC performed well with all grasses evaluated, best mixtures varying depending on the site or year.

Conclusions KC potential for permanent pastures of eastern Canada has been demonstrated. We recommend the inclusion of KC in the list of forage species recommended for use in permanent pastures locally. KC could be considered an alternative to white clover.

Reference

Laberge, G., Seguin, P., (2005). Le trèfle Kura : une légumineuse pour pâturages permanents [in French]. *Cahiers Agricultures* 14(5), 429-435.

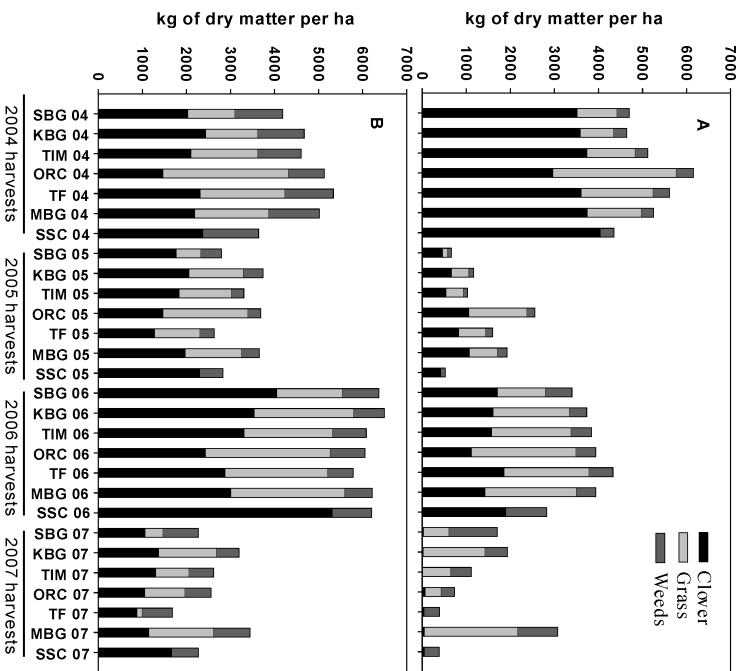


Figure 1 Forage yield of white clover (a) and Kura clover (b) mixtures with grasses (Normandin 2003 seeding) ; SBG, smooth bromegrass ; KBG, Kentucky bluegrass ; TIM, timothy ; ORC, orchard grass ; TF, tall fescue ; MBG, meadow bromegrass ; SSC, solo-seeded clover.