C-Banding of Alfalfa Chromosomes: Standard Karyotype and Analysis of a Somaclonal Variant

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C-banding was used to identify diploid alfalfa (*Medicago sativa* L. cv. CADL; 2n = 2x = 16) somatic chromosomes and to construct a karyogram. CADL is "cultivated alfalfa at the diploid level" and was derived from cultivated tetraplolds. All chromosomes were differentially C-banded and were differentially C-banded and were identified individually based on position, number, and/or staining intensity of bands. All chromosomes showed centromeric band(s). Six of eight chromosomes—1, 2, 4, 5, 6, and 8—had telomeric bands but differed in number (0–2) and position of intercalary bands. Chromosomes 3 and 7, which lacked telomeric bands, were also distinguishable. Chromosome 3 exhibited an intercalary band, whereas chromosome 7 was smaller and possessed only a centromeric band. C-banding polymorphism was observed for CADL within some homologous chromosome pairs. The usefulness and reproducibility of the C-banding technique was demonstrated by the analysis of a plant regenerated from tissue culture. Chromosomal rearrangements were documented, including an apparent deletion and an isochromosome derived from chromosome 8. It should now be feasible to use C-banding to gain basic cytogenetic information and to monitor chromosome transfers from other Medicago species into alfalfa.