# Nuclear and Cytoplasmic Diversity of Pacific Northwest Wheat Germplasm. (C08-edwards173424-Oral)

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## Abstract:

Recent studies have shown that simple sequence repeat (SSR) markers are useful for analysis of diversity of wheat germplasm due to their abundance, high level of polymorphism, and high throughput potential. We genotyped 170 lines of wheat selected for their importance to Pacific Northwest (PNW) breeding programs using 30 nuclear and 21 chloroplast SSRs. Preliminary analysis yielded clear groups distinguishing PNW, Great Plains, and European clusters. Additionally, patterns derived from genotyping matched some expectations from pedigree information. Currently, diversity patterns and estimates for nuclear SSRs are being compared with those from chloroplast SSRs. Unique alleles were identified and the feasibility of using these for definitive genotype identification of lines is being explored. Genetic diversity of cultivars based on date of release is being studied to characterize patterns of change in relative diversity over time. Finally, specific markers are being used to ascertain any differences in diversity or patterns between the A, B, and D genomes. Our long-term goal is to provide a clearer picture of germplasm diversity and to explore potential uses of germplasm genotyping.

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