



## Plant & Animal Genomes XIV Conference

January 14-18, 2006  
Town & Country Convention Center  
San Diego, CA

---

Poster: Wheat, Barley, Rye, Oat, and related

---

**P282**

### **Microsatellite Markers Linked To Wheat Leaf Rust Resistant Gene *Lr17* On Chromosome 2AS**

**Xiuling Zhang<sup>1</sup>, Ravi P. Singh<sup>2</sup>, Jackie C. Rudd<sup>3</sup>, Yue Jin<sup>4</sup>, James A. Kolmer<sup>4</sup>, James A. Anderson<sup>1</sup>**

<sup>1</sup> Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN, 55108, U.S.A.

<sup>2</sup> CIMMYT, Apartado Postal 6-641, Mexico D.F., 06600, Mexico

<sup>3</sup> Texas Agricultural Experiment Station 6500 Amarillo Blvd. W., Amarillo, TX, 79106, U.S.A.

<sup>4</sup> USDA-ARS, Cereal Disease Laboratory, University of Minnesota, St. Paul, MN, 55108, U.S.A.

Leaf rust, caused by *Puccinia triticina* is a widespread disease of wheat (*Triticum aestivum* L.) worldwide. Genetic resistance is an economical approach to control the disease. Although no longer widely effective, the seedling leaf rust resistant gene *Lr17* is present in a number of CIMMYT, Australian, and US wheat cultivars. This gene is located on chromosome 2AS, but has not been mapped with DNA markers. Our objective was to map *Lr17* with linked microsatellite markers. Recombinant F<sub>5:7</sub> inbred lines (RIL) (124 total) of a cross of Jupateco 73S (with *Lr17*) and Weebill 1 (without *Lr17*) were used in this study. The primary leaves of seedling plants, were inoculated with a race avirulent to Jupateco 73S and virulent to Weebill 1. Infection type of each line was recorded as low, high, or segregating. The segregation ratio of infection types of the RILs fit a one-gene model. Six microsatellite markers on chromosome 2AS were polymorphic between the two parents and were screened on the RILs. Microsatellite markers *Xgwm636* and *Xbarc124* were both linked distal to *Lr17*. *Xgwm636* is the closest marker to *Lr17* (4.0 cM). *Xbarc124* is a dominant marker in this population and is 4.8 cM distal to *Xgwm636*.