

**PI: Jose Costa**

**PI's E-mail: costaj@umd.edu**

**Project ID: FY12-SW-003**

**ARS Agreement #: 59-0206-0-059**

**Research Category: VDHR-SWW**

**Duration of Award: 1 Year**

**Project Title: Development of Wheat with Resistance to Scab Adapted to the Mid-Atlantic.**

**PROJECT 1 ABSTRACT**

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The overall goal is to develop scab resistant varieties with competitive grain yield and quality that can be part of an integrated program for the control of scab mostly focusing on the use of native resistance using traditional breeding and molecular markers. This project will include the following four objectives: 1) Breeding soft red winter wheat adapted to the Mid-Atlantic with resistance to scab using traditional and molecular assisted breeding methods; 2) Evaluate wheat advanced lines in the Uniform Scab nurseries, Maryland State Test and Regional Nurseries in inoculated and misted nurseries; 3) Narrow down regions of scab resistance on chromosome regions 3BS, 5A, and 2DL by identifying lines with recombination events with molecular markers; and 4) Map resistance to DON accumulation in the native source MD01W233-06-1 by phenotyping and genotyping a 131 doubled haploid population derived from the cross of MD01W233-06-1 with the susceptible genotype SS 8641.