

## Project Report (2010)

### Weather and Climate Impacts on the Incidence of TSWV and White Mold in Peanut

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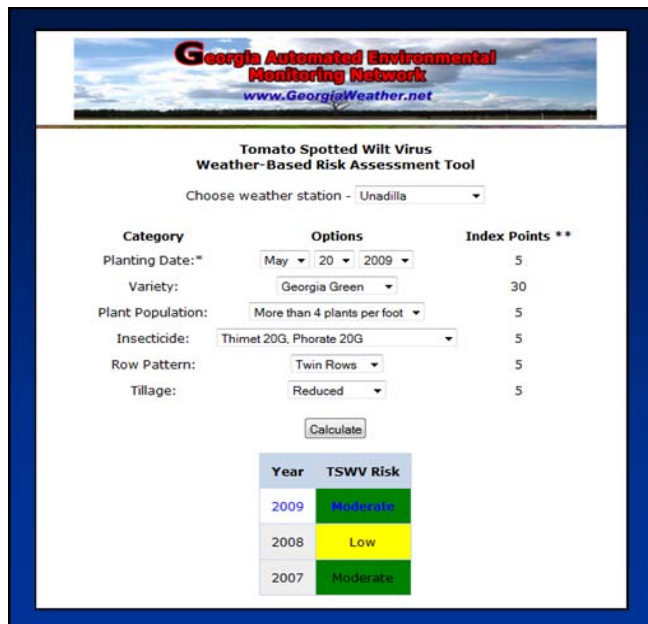
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#### Introduction

Annual variation in tomato spotted wilt severity and white mold incidence in peanut may be partly linked to changing weather patterns during the growing season and perhaps annual climate variability. Understanding the impact of climate and weather variability on these two diseases is important and necessary for developing a comprehensive integrated management strategy. The overall objective of this work is to determine the relationships between weather patterns/El Niño-Southern Oscillation (ENSO) phases, and the incidence of TSWV and white mold in peanut.

#### Progress

*Tomato spotted wilt virus:* A TSWV risk calculator developed from this work and is now available on the Georgia Automated Environmental Monitoring Network (AEMN) website ([www.georgiaweather.net](http://www.georgiaweather.net)) for assessing the expected level of spotted wilt risk in peanut. The tool was based on TSWV risk index, historical on-farm survey data of TSWV severity, and weather data from AEMN. We are currently evaluating the tool using the predicted risk and the last season field observations of spotted wilt intensity. This will enable optimization of the web tool (Figure 1). Other results from this work also showed a lower risk of spotted wilt intensity during La Niña years. More information is available in our recent paper published in *Crop Protection* (<http://dx.doi.org/10.1016/j.cropro.2009.10.014>)



*White mold:* Data analysis required for development of a location-specific weather-based online tool for white mold is in progress. Analysis of historical white mold field observations in Tifton, GA and weather variables that favor white mold incidence in peanut is in progress. We are exploring the effect of rainfall patterns during the growing season on the incidence of white mold, and evaluating combinations of weather variables critical for predicting the risk of white mold incidence. A web-based risk assessment tool developed from this work would assist growers in managing risks associated with white mold problem in peanut.

Figure 1. A screen capture of the web-based Tomato spotted wilt (TSWV) risk calculator on the website [www.georgiaweather.net](http://www.georgiaweather.net) for assessing the expected level of spotted wilt risk in peanut