

Developing a Web-Based Decision Support Program for Peanut in the V-C Region.

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Integrated pest management (IPM) is an essential part of any successful peanut program. Often, the interactions between multiple pest species and crop/pest management strategies are complex. Growers and their advisors may have a difficult time weighing the positive and negative impacts of different strategies. Scientists have developed a comprehensive decision support system to help peanut growers and their advisors assess their risk of developing pest problems. The online pre-season planning aid (<http://www.peanut.ncsu.edu/risk/>) is free, and available to the public. The program incorporates information from a yearly extension publication (*North Carolina Peanut Information*), as well as data from individual scientists. Previously validated risk indices for tomato spotted wilt virus (TSWV) and southern corn rootworm (SCR) were used as a framework for the program. Risk indices for other pests important in the V-C region were created using data from individual scientists. Users provide information outlining basic agronomic inputs including cultivar, field history, presence or absence of irrigation, planting date, rotation crops grown in that field for the past 1, 2, 3 and/or 4 years, soil pH, soil drainage and texture, in-furrow insecticides, nematicides, tillage, disease management, plant population, and planting pattern. A risk score for each pest is calculated using data stored in an Access database. Seven diseases are assessed in the decision aid: *Cylindrocladium* black rot (CBR), early leaf spot, late leaf spot, *Sclerotinia* blight, southern stem rot, TSWV, and web blotch. The decision aid also includes two arthropods (SCR and twospotted spider mite) and three nematodes (northern root knot, peanut root knot, and sting). As a user enters information into the program, a color-coded risk line is displayed for each individual pest. As a user changes the scenario, the risk line for each pest may shift from one risk category into another: high risk (red), medium risk (yellow) or low risk (green) category. Based upon the values associated with the specified combination of cultural, chemical and management strategies, risks for some pests may go up as risks for others decrease. Reports are available which summarize the risk index calculations for each pest species. Future developments for the program include the inclusion of disease and insect identification pages, as well as the addition of economic values associated with management strategies. Validation of the scoring system and risk is also needed.