Model to Determine Suitability of a Region for a Large Number of Crop Species. (A03-hollinger115847-Poster)

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Abstract:

A model was developed to evaluate the suitability of over 900 crops, to assist producers and agronomists investigate potential alternative crops. The model variables, selected to match the available environmental requirements of a large number of crops, include daily air temperature, annual precipitation, crop growing season length, extreme minimum winter temperature, soil texture, soil drainage, and soil pH. Each variable was scored from highly suitable (score of 4) to unsuitable (score of 0) in over 2500 separate polygons, defined by the STATSGO map units and Illinois county boundaries. The law of the minimum was applied to precipitation, growing season length, and extreme minimum winter temperature. Thus, if one of these variables was unsuitable for a species, the location was deemed to be unsuitable for that species. The other four suitability scores (air temperature, soil texture, soil drainage, and soil pH) were averaged to obtain a combined score, and then multiplied by the suitability scores of the other three variables. The results can be viewed on the Alternative Crop Suitability Maps Web site at http://sws.uiuc.edu/data/altcrops/.

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