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Using decision trees for variety selection

Crop variety trials may consist of 50 entries or more. The main purpose of variety trials is to provide unbiased and reliable information to producers for making better variety selections. Variety selection is a very important and easily managed decision for each field every year. Better variety decisions lead to 1-2% increase in yearly yield. Variety trial results are often presented as a list of varieties in descending order of yield. These tables are deceptive because there is no expected difference in yield for the top varieties, yet the table leads producers to believe that the top variety is better than a lower ranked variety. The reasons for the continued use of deceptive variety trial tables are investigated. Wheat variety trials in Colorado USA are used to illustrate the confusion and ineffectiveness of common reporting practices and how we alleviate ambiguities by the use of variety selection decision trees and on farm testing of select varieties. A combination of these practices has led to vastly improved rates of new variety adoption and improved planting of certified seed of superior Colorado State University varieties in the state in addition to higher yields.

Biography

Jerry Johnson is a Professor and Extension Specialist in the Department of Soil and Crop Sciences at Colorado State University in Fort Collins, Colorado, USA. He has conducted food crop variety trials in Francophone West Africa, the state of Washington USA, and in Colorado USA from 1976 to till date.

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