

WEED EMERGENCE: A REVISED WEEDCAST AND ITS USER VERSATILITY. Frank Forcella, Dave Archer, Ed Luschei, Kurt Spokas, and Andy Korth. Research Agronomist, Agricultural Scientist, Associate Professor, Soil Scientist, and Computer Science Student, USDA-ARS Soils Lab, Morris, MN 56267; University of Wisconsin, Madison; and University of Minnesota, Morris.

WeedCast is a software program that simulates timing of seedling emergence and rate of seedling growth of weeds important in crops within the north central region of the United States and adjacent Canada. The program was revised recently as a Java application. New features include the following: (1) Allowance of user-supplied soil temperature data (5 cm depth). This feature avoids previous errors associated with prediction of soil temperatures based upon air temperatures. However, for users without access to soil temperature information, this important variable still can be estimated by WeedCast from air temperatures. (2) Ability to alter default values for base temperature, base water potential, and coefficients of nonlinear equations specific for each weed species. (3) Support of user-inserted equations that describe emergence responses to soil hydrothermal time, or seedling growth responses to thermal time (air growing degree days). Default equations (and coefficients) are saved and can be resurrected at any time. (4) Capacity for users to add new species to the list of weeds already in the WeedCast database. Thus, the revised WeedCast can serve as a modeling shell for users who are interested in experimenting with new species or improving models of currently listed species. The revised WeedCast may have utility in classroom, extension, industry, and field settings. It can be downloaded freely from <http://www.weedcast.net/>.