**Process Crop Models: Alfalfa 1.4**

**Description**
Alfalfa 1.4 is a DOS, Windows, or Macintosh based model that simulates growth and development of the alfalfa plant, based in integrative plant physiology and morphology. The model permits simulation of the diurnal patterns of production processes and growth for studying the influences of temperature, radiation, water deficit, and carbon supply. Beginning with tissue and organ level information, the growth of shoots is simulated for up to five age classes of stems. Perennial, underground structures (crown, taproot, and fibrous roots) are simulated over 10 soil layers. The model includes variations in plant population so that overwintering and stand persistence can be simulated.

**Appropriate Use**
Suitable to a wide range of management issues and for coupling to insect and disease models. Several usual adaptation strategies for coping with climate change (changes to cultivars, planting dates) may be tested.

**Scope**
All locations; agricultural sector; site-specific.

**Key Output**
Total above-ground biomass (edible yield).

**Key Input**
Daily weather data from standard meteorological reports.

**Ease of Use**
Relatively easy to use with sufficient background.

**Training Required**
Advanced programming skills (knowledge of FORTRAN language) helpful, agronomic background required.

**Training Available**
No formal training currently offered beyond the training manual.

**Computer Requirements**
DOS, Windows, or Macintosh environments. Instructions for downloading given at the website below in Contacts.

**Documentation**

**Applications**
Used by farmers in the U.S.

**Contacts for Tools, Documentation, Technical Assistance**
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**Cost**

**References**