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Research and IPM
Phenology Model Database

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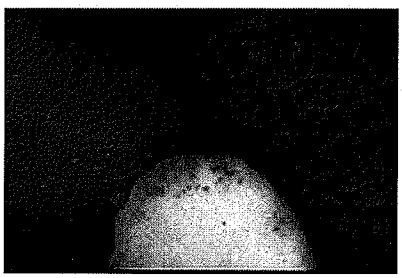
Columbia Root Knot Nematode



Scientific name: *Meloidogyne chitwoodi*

Phenology models predict timing of events in an organism's development. For many organisms which cannot internally regulate their own temperature, development is dependent on temperatures to which they are exposed in the environment.

Information in this database comes from published articles. It may be used in conjunction with field monitoring and a degree-day calculator.

Note: Before using a model that was not field tested in your location, you should test the model for one or more seasons under your conditions to verify that it will work for you.

Model 1 of 1

Pinkerton, J. N., G. S. Santo, and H. Mojtahedi. 1991. Population dynamics of *Meloidogyne chitwoodi* on Russet Burbank potatoes in relation to degree-day accumulation. J. Nemat. 23: 283-290.

Location of study: Washington (field and laboratory studies)

Developmental threshold
Lower: 41.0°F (5.0°C)

Method of calculation: Max-min (UC IPM recommends Single Sine)

Degree-day accumulations required for each stage of development
Annual maximum and minimum soil temperatures at 15 cm deep were 21 to 22°C and -1 to 0°C.

Host: Russet Burbank Potatoes	DD (°F)	DD (°C)
Air temperatures were used in degree-day calculations		
Tuber initiation:	810-900	450-500
Ow females produce egg masses:	1080-1440	600-800
Second generation hatch:	1710-1980	950-1100
Juveniles II in tubers (1st generation)	1778-2099	988-1166
Third generation hatch:	2700-2880	1500-1600
First generation time:	1800	1000
Subsequent generation time:	900-1080	500-600

ANNUAL MAXIMUM AND MINIMUM SOIL TEMPERATURES AT 15 cm DEEP WERE 21 TO 22° C AND -1 TO 0° C.
