

Serving as a committed partner to our private and public clients, Metstat provides high quality weather and climate information for agricultural interests. An expansive in-house database of archived climatological and meteorological data coupled with cost effective interpolation methods allows Metstat to create high-resolution maps of any agricultural climate variable. Using the latest geographical information system (GIS) technology, a variety of GIS formats can be developed to meet the needs of innovative agricultural companies.

The year-to-year and day-to-day variation of weather complicates scheduling of agricultural practices. However, use of weather observations, weather forecasts, archived climate data, and spatial meteorological/climatological data optimize crop management practices. Weather variables including air and soil temperatures, precipitation, humidity, solar radiation, and wind speed and direction are measured frequently across the U.S. This information is used to calculate other variables that are important to the agriculture community, such as growing-degree days, evapotranspiration, freeze and frost dates, and growing season.

**Growing-Degree Days:**

Temperature is a major determinant of the rate of crop development, growing-degree days are used to track the development of crops and to estimate the time of harvest.

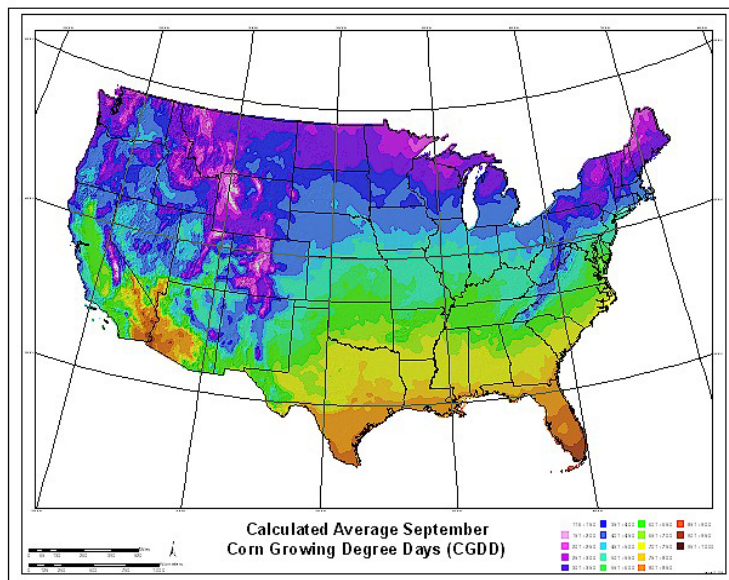
**Precipitation:**

The type, timing, and amount of precipitation received during a year play a critical role in crop productivity. The number of days between rain events and average monthly rain is important for determining the number of days available for fieldwork.

**Soil Moisture:** Knowing the soil moisture storage capacity allows irrigators to determine how much water to apply and for how long. This information can greatly increase the ability to conserve water and energy, optimize crop yields and avoid soil erosion and water pollution. Soil moisture content also plays an important role in determining the date for spring-planted crops.

**Derivable Variables:** Metstat uses state of the art cost effective tools, software, and methodologies to derive and spatially distribute a multitude of agricultural and climatological variables such as:

- Maximum/Minimum Temperature
- Dew Point Temperature/Humidity
- Precipitation
- Freeze/Frost Dates
- Drought Indices
- Heating, Cooling, and Growing Degree Days
- Snowfall and Snow Depth
- Potential Evapotranspiration
- Soil Moisture Capacity
- Other customizable variables



**Temperature:** This data can be used to derive the average freeze/frost dates. The growing season, the period between the last spring freeze and first fall frost, is important to understand the growing conditions for cultivated crops.

**Evapotranspiration:** The amount of water transferred from soil and plant surfaces into the atmosphere is of great importance for such disciplines that determine

irrigation scheduling, irrigation system design and hydrologic studies.

**Snowpack Water Content:** The slightest warming or cooling of our climate may change the amount and timing of snowmelt and runoff in western regions. A warmer climate may cause less snow to accumulate and yield less water. The change in runoff volume and timing means that western farmers may need to make new choices when deciding what crops to plant and at what time of year.