



IPM
Planning Guide

instructions



Climate Appraisal Instructions

INSTRUCTIONS

Climate Appraisal Form

What is the Climate Appraisal Form?

The Climate Appraisal Form is a powerful tool that will serve as the foundation for all of your IPM planning. Based on 30 years of weather data (obtained from the closest weather station to your site), it provides a one-sheet snapshot of the month-to-month weather conditions that you can expect at your location.

What is the Climate Appraisal Form used for?

- Completing the Pest Worksheet and the IPM Planner
- Predicting turf growth, performance, stress and nitrogen demand
- Planning management strategies to optimize turf growth
- Explaining turf performance at different times of the year

Estimated time (steps 1-4): 30 minutes

Materials needed

Forms: Climate Appraisal Form (Microsoft Excel spreadsheet available in metric or English units)

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1. Visit a climate information website such as:
 - World Climate (<http://www.worldclimate.com/>)
 - Weatherbase (<http://www.weatherbase.com/>)
2. Locate the average monthly air temperatures and average monthly precipitation for your location (if your location is not included in either of these databases, try entering the names of nearby locations with similar weather patterns). Print this information out.

(Note: In addition to average air temperatures, many websites will also list the average high and low temperatures for a location, but *do not use* the high and low temperature information).
3. Open the Climate Appraisal Form (English units) or the Climate Appraisal Form (metric units).
4. Click on “save as” in the “File” menu, choose an appropriate location on your computer to save the file (the authors suggest that you create an “IPM Plan” folder for all of your files) and name the file appropriately.

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For file naming, the authors suggest the current date followed by the word “climate appraisal” (example: 2010_0513_climate_appraisal). Once the file has been saved on your computer, you can begin work on it.

5. Type the following information into your spreadsheet, using the monthly data that you printed out in step No. 2:
 - the average air temperature information for each month
 - the average precipitation information (in inches or centimeters, your preference) for each month
 - the maximum rate of nitrogen you wish to use per month on your cool-season turf
 - the maximum rate of nitrogen you wish to use per month on your warm-season turf
6. Once the data has been entered, estimates of turfgrass growth and nitrogen requirements will be visible on the form.
7. Print this form out.

The next step

Complete the Management Zone Inventory.

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Reading your Climate Appraisal Form

The Climate Appraisal Form you have just generated is based on the average of 30 years of climate data (the “30-year normals”) from a weather station that is as close as possible to your golf course. Once you complete it, it will include the following information:

- **Normal average temperature:** the average monthly air temperature at your site, based on the past 30 years of air temperature data.
- **Normal precipitation:** the average monthly precipitation (rain and snow), based on the past 30 years of precipitation data.
- **Turf growth potential:** the authors have calculated the growth potential for cool-season turf (“cool GP”) and warm-season turf (“warm GP”). Explained in greater detail in the Growth Potential Reference, the turf growth potential values are estimates of the growth of cool- or warm-season turf based on expected monthly air temperatures. Values range from 0 to 100 percent, and the higher the value, the greater the turf growth. When air temperatures are either too high or too low for optimal growth, the growth potential will decrease.
- **Periods of turf stress:** When growth potential values are less than 50 percent, the turf is considered to be under stress. You may want to use a yellow highlighter to note stress periods on your Climate Appraisal Form.
- **Maximum nitrogen requirements:** Maximum monthly N requirements have been calculated based on the projected growth potential of cool- or warm-season turf. The authors have set the maximum monthly requirement for any turf type at any time at 0.7 lb/1,000 sq. ft. of elemental N. You should not exceed these values, unless you are in an area with heavy rainfall (greater than 5 inches/month -- see below for more information).

A note on nitrogen demand in heavy rainfall areas: *In areas that experience heavy rainfall (more than 5 inches per month), maintaining nitrogen at adequate levels is a challenge. Under these conditions, the maximum rates of 1 lb. elemental N/1,000 sq. ft./month may need to occasionally be exceeded. Consider the use of granular, long-chain ureaformaldehyde nitrogen sources such as Nitroform 38-0-0. These microbial-release fertilizers are less likely to be leached by rainfall than other N sources. If these products are used, higher rates (2-4 lbs. nitrogen/1,000 sq. ft. or more) are optimal. Because these rates are higher than those listed on your Climate Appraisal Form, application will be less frequent. Reapplication should occur based on turf performance and color.*