TURF PESTCASTER

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The Neogen Pestcaster can be a valuable tool for managing turfgrass. It contains a model to calculate degree days for more timely application of Embark for annual bluegrass seedhead suppression and models to forecast the development of devastating diseases like anthracnose and Pythium blight for more accurate application of fungicides.

Annual bluegrass loses much of its root system during maximum seed production in the late spring. This results in a weaker plant that is more susceptible to drought stress and diseases going into the summer stress period. Suppressing seedheads will lead to healthier annual bluegrass plants that are better able to survive the summer heat stress period.

The Pythium blight and anthracnose models allow fungicide applications to be made only when the environmental conditions necessary for the development of the disease are present. More timely fungicide application can result in cost savings of both fungicides and labor. This will result in fewer pesticides being added to the environment and reduced pesticide applicator exposure.

This has certainly been the hottest summer in memory. There has been concern all summer for Pythium blight out-breaks. Many people have been treating for Pythium blight since early June and yet only two outbreaks have occurred, one on July 26 and the other on August 2. Both outbreaks were accurately predicted by the Pestcaster. Having a Pestcaster on your golf course could have resulted in a considerable savings on Pythium blight fungicides this summer.

In addition to the models, the Pestcaster is an excellent weather station which allows you to monitor the environmental conditions of your golf course. It will provide you with an excellent record of weather data in case a problem occurs following a pesticide application, or for simply monitoring weather conditions for syringing, fertilizer applications, and fungicide applications for other diseases.

The Pestcaster monitors the following environmental conditions on an hourly basis:

1) Air temperature
2) Relative humidity
3) Leaf wetness
4) Dew Point
5) Soil temperature (2 depths)
6) Wind speed
7) Rain fall

Disease development histories for Pythium blight and Anthracnose for July 12 through July 26 are given in Table 7.

TABLE 7.   Output from the Neogen Pestcaster for the prediction of disease
severity of Anthracnose and Pythium blight.

Anthracnose Model
Updating forecast
Anthracnose forecast for JUL 26 1988
LIGHT infection predicted
Protect turf with fungicide
ASI: 2.6
3 day averages:
Air temp: 69.8 F
Leaves wet: 13.2 hrs
List anthracnose history? Y/N Y

| | | 3 day averages | |
Date	Level of infection	Temp F	Hrs leaves wet
JUL 13 1988	LIGHT	72.4	7.75
JUL 14 1988	LIGHT	73.2	5.58
JUL 15 1988	MODERATE	75.5	3.92
JUL 16 1988	MODERATE	75.8	5.00
JUL 17 1988	SEVERE	78.2	6.17
JUL 18 1988	SEVERE	76.7	7.75
JUL 19 1988	SEVERE	76.8	8.67
JUL 20 1988	MODERATE	74.0	6.58
JUL 21 1988	LIGHT	71.5	9.08
JUL 22 1988	LIGHT	70.6	10.50
JUL 23 1988	LIGHT	69.5	15.08
JUL 24 1988	LIGHT	69.4	15.08
JUL 25 1988	LIGHT	69.7	14.33
JUL 26 1988	LIGHT	69.8	13.17

Pythium Blight Model
Updating forecast
Pythium forecast for 11:00 JUL 26 1988
Conditions not favorable for blight
Max air temp: 81.2 F
Continuous hours of RH > 90%: 9 hrs
RH > 90% and min air temp: 58.8 F
RH < 90% for last 3 hrs
List historical pythium data? Y/N Y

| | | RH > 90% | | |
Date	Max air temp F	hrs	min temp	Spray
JUL 12 1988	83.6	24	59.2	NO
JUL 13 1988	84.4	3	56.1	NO
JUL 14 1988	89.3	0	----	NO
JUL 15 1988	89.7	1	58.4	NO
JUL 16 1988	90.1	0	----	NO
JUL 17 1988	92.9	15	69.2	YES
JUL 18 1988	88.5	10	65.2	NO
JUL 19 1988	79.2	14	65.2	NO
JUL 20 1988	82.8	6	64.0	NO
JUL 21 1988	80.8	9	59.2	NO
JUL 22 1988	79.6	10	60.0	NO
JUL 23 1988	81.2	10	59.6	NO
JUL 24 1988	81.6	12	56.1	NO
JUL 25 1988	83.2	7	64.4	NO