

Agrometeorology- the Trinidad and Tobago experience

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Agrometeorology in Trinidad and Tobago is under the auspices of the Climatological Department. Initially, post-graduate training at the Master of Sciences level was sourced and the officer specialized in rice production, training was also sourced at the post-graduate diploma level.

Data sharing arrangements were made with two other State agencies for the use of the rainfall and temperature data on a real time basis. The first was the Water Resources Agency, which has a large network of rain gauges and evaporation stations across the island. Caroni 1975 Ltd, the largest agricultural company in the island has a large database of rainfall and temperature measurements, which are used to increase harvests of sugarcane, rice citrus, etc.

Additionally, the Meteorological Service purchased Automatic Weather Stations to augment data collection in data sparse areas.

Caroni 1975 Ltd., the largest agricultural company, has extensive cultivation of sugarcane, citrus and rice. Additionally there are quite a few individual farmers with large coconut estates, which produce copra used in the manufacture of oils and soaps. There are also many small- scale farmers producing short-term crops for either local consumption or export. Figure 1 shows areas of the large-scale cultivated crops.

In the early 1990's, in conjunction with the Farmers Training College in Centeno, lectures were given to small-scale farmers on how the weather affect determines local agricultural practices, e.g. what crops to grow and when, irrigation needs, drainage, mulching, windbreakers and pest/disease protection.

It is often stated in Trinidad that the small-scale farmer uses too much pesticide. Therefore, this audience was targeted in 1995 for

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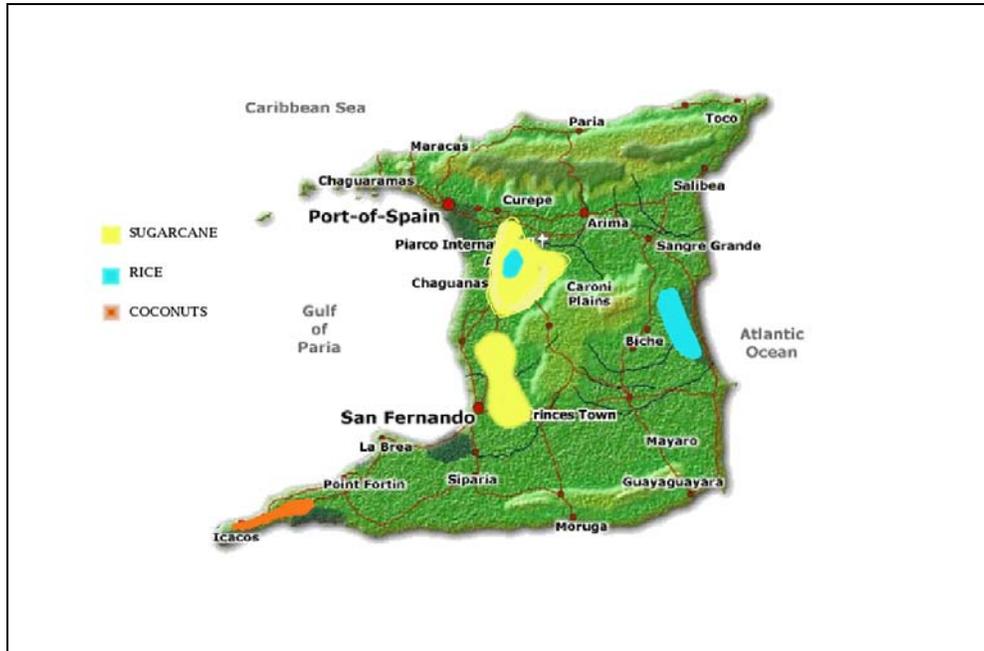


Figure 1. Areas of large-scale cultivation in Trinidad

agricultural weather forecast, using the radio as means of dissemination. The forecast included:

- Sky conditions
- Wind direction
- Weather
- Temperature and relative humidity
- Amount of sunshine expected
- Best time to apply chemicals/fertilisers

An example of the agrometeorological forecast is given in Figure 2.

Traditional farming practices in Trinidad and Tobago rely on moon phases in all facets of agriculture. Farmers seemed unwilling or unable to accept the correlation between heat, humidity and the spread of pests and/or diseases. Overuse of chemical pesticides as stated earlier, is a common problem, with the accepted adage “ *if 100ml is the recommended dosage once every two weeks for the control of a particular pest, then a greater dosage with a higher frequency is better*”.

**TRINIDAD AND TOBAGO METEOROLOGICAL SERVICE
AGRICULTURAL WEATHER FORECAST**

ISSUED AT 4:00PM ON WEDNESDAY OCTOBER 18, 1996

FOR TONIGHT AND TOMORROW

Sky conditions... Tonight... Mostly Cloudy

Tomorrow... Cloudy at times in the Afternoon

Rainfall... Tonight.. 5 to 10mm in Rain

Tomorrow... 10 to 20mm in Showers and Isolated Thundershowers

Winds... Mid-Morning to Mid-Afternoon... East-southeasterly

occasionally moderate... 20 to 25km/h... other times calm

Minimum Temperature Tonight... 23 deg. C

Maximum Temperature Tomorrow... 33 deg. C

Farmers will experience some interruptions with harvesting and other field work during tomorrow because of showers and isolated thundershowers.

Sunshine 5 to 7 hours

Highest Relative Humidity Tonight... 97%

Lowest Tomorrow... near 65%

Tomorrow early morning will be the best time to apply chemicals as winds will be calm to light and the risk of wash off will be low.

The next forecast will be issued at 5:00am tomorrow morning.

Figure 2. Agrometeorological Weather Forecast

Despite the issuance of the forecast and the lectures to the farmer at the Farmers Training Collage in Centeno, the practice of over dosage of pesticides continues.

There is a need also for greater ties between the Meteorological Service and the university specifically in the field of soil science, to foster a better understanding of the response of the different soil types to floods and dry spells, especially its impacts on irrigation.

The competent staff levels have fallen drastically from 1998 and both members of staff with specialized agrometeorological training have since retired, which forced a curtailment of the agricultural weather forecast in 1999. The software for the automatic weather stations was not Year 2000 compliant, which further exacerbated the problem. There have been subsequent requests from farmers for a re-installation of the forecasts.

The Meteorological Service recognized the importance of agrometeorology to the food security of the nation and the export thrust of the agro-processing industry, whether in food crops or horticulture, therefore, training has been funded to rebuild this vital area. Further, the replacement of the automatic weather stations has been funded and discussions are underway with farmers on their needs related to agricultural weather forecast.

It is hoped during the coming year that the necessary infrastructure and staff will be on stream so that the Agrometeorological section can be fully activated and forecasts once again issued.