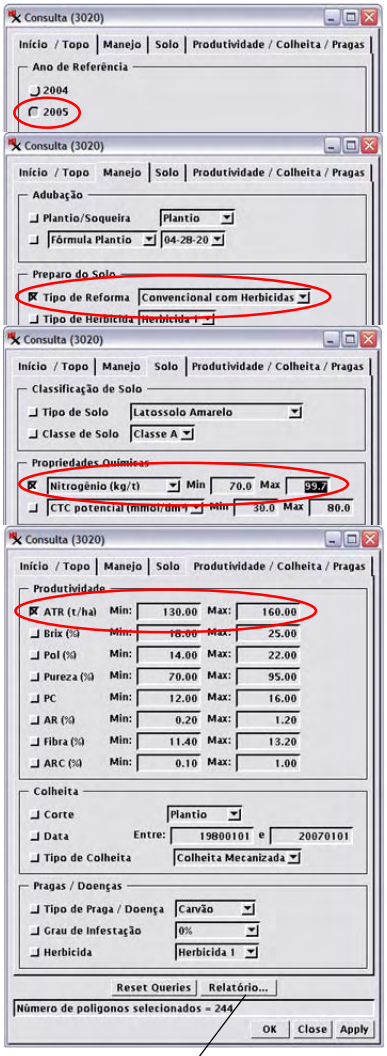
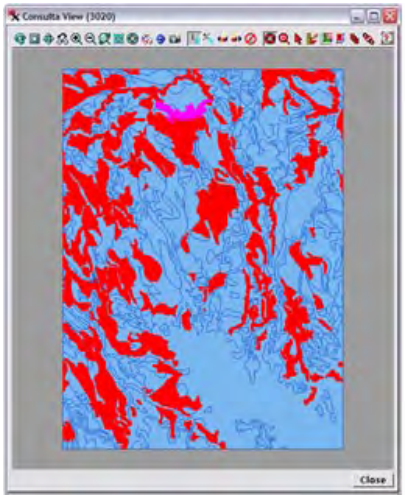
Complex Query and Multipage Reports via Script



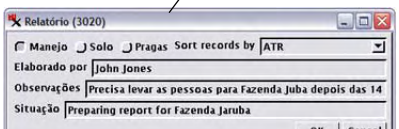
The TNT Geospatial Scripting Language (SML) allows you to create custom applications with a user interface designed to simplify setting up complex operations. For example, MicroImages recently collaborated with a reseller to use SML to create a farm management application for the sugar cane industry. The script dialogs (in Portugese) allow people with little training to set up and run queries involving multiple criteria about soils, inputs, productivity, and crop condition and to generate attractive reports of the query results as PDF files. This script can be launched from a hyperlink in a layout in TNTatlas, TNTview, or TNTmips.

Simple Interface for Complex Queries The Consulta script presents a custom dialog window with multiple tabbed panels (set up using a dialog specification in an XML file) and a view window that displays the field boundaries of a group of separate farms. This dialog provides controls for selecting and setting up queries of over 40 attributes and easy selection of allowed values for each attribute. When the Apply button is pressed the script uses the dialog settings to construct the appropriate queries (which may involve text, numeric, logical, or date-time fields), find all polygons that match all of the specified criteria, and highlight them in the script's view window.



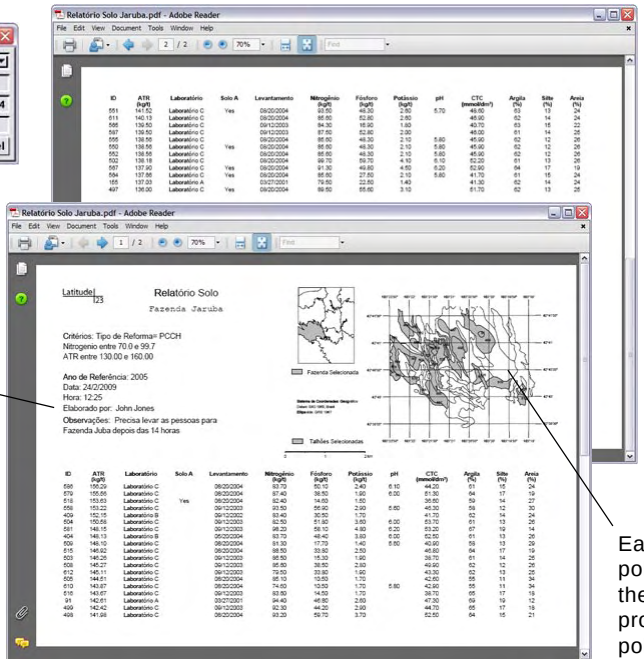
The Consulta dialog window (left) created by the script uses tabbed panels to present over 40 attribute types that can be queried. A toggle button activates each attribute query; menus present value choices for text attributes and numeric fields allow entry of the desired range for numeric and date attributes. Pressing the Apply button runs the queries and highlights in the view (shown above) the field polygons that match all query criteria. In this example 244 polygons match the values specified for 4 attributes.

Create Multipage Reports The user of the script can also generate reports containing attribute information for the fields selected by the current query set. A report PDF file is created automatically for each of the farms that has polygons included in the selected set. The user can choose one of three report categories with different attribute types focusing on management, soils, and diseases and pests. Each report is generated from a base layout for that farm and report type and includes a farm map with the selected polygons shaded, a list of the query criteria used, the report author, date and time, and any observations entered by the author in the report-creation dialog. The tabular information is filled in automatically from the selected polygons and sorted by the attribute column selected by the author. The script automatically determines the number of pages needed to show all of the required table rows and generates additional pages as needed by creating a virtual layout for each additional page and rendering it to the same PDF file. The first page of a sample report is shown on the reverse side of this page.



The report-creation dialog (shown above) can be opened after a successful query. It provides a choice of three report types, options for sorting the tabular data in the reports, and fields for entering the report author and desired observations (which are appended to text blocks on the first page of each report).

The script generates a separate report for each farm and automatically determines the number of pages required to show all of the tabular data. Shown to the right is a 2-page report.



Each report includes a map of the field polygons for that farm. Polygons that match the query set are automatically shaded and provided with polygon labels showing the polygon ID numbers.

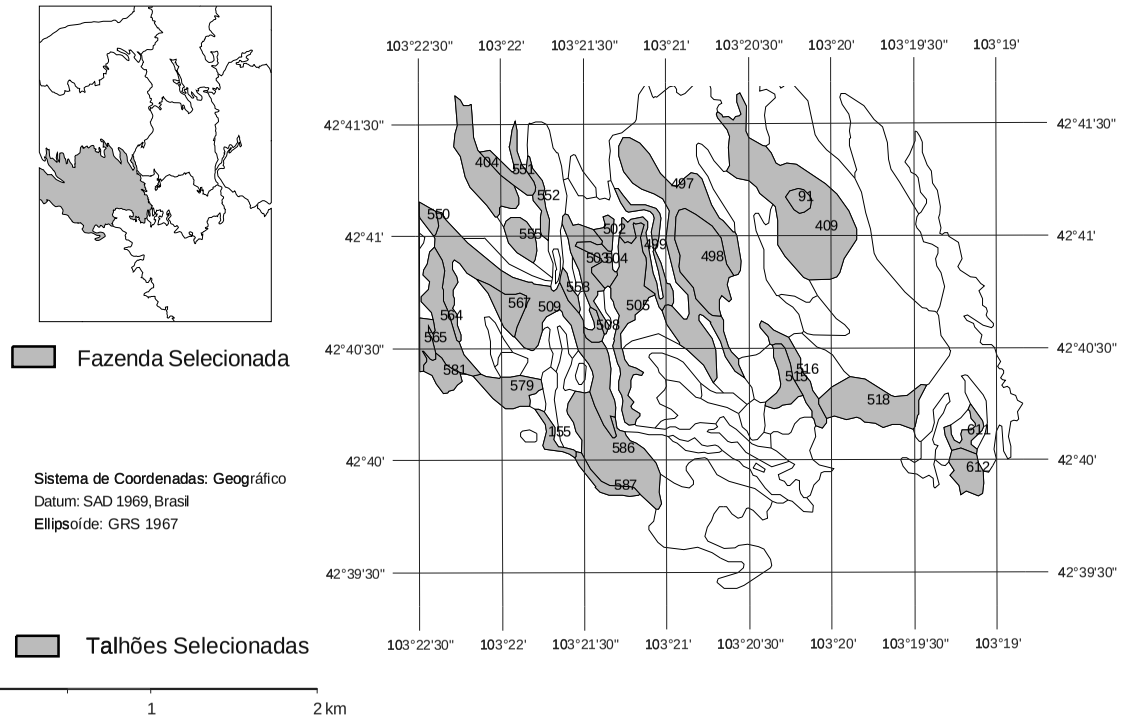
Latitude 23

Relatório Solo

Fazenda Jaruba

Critérios: Tipo de Reforma= PCCH
Nitrogenio entre 70.0 e 99.7
ATR entre 130.00 e 160.00

Ano de Referência: 2005
Data: 24/2/2009
Hora: 12:25
Elaborado por: John Jones
Observações: Precisa levar as pessoas para Fazenda Juba depois das 14 horas



ID	ATR (kg/t)	Laboratório	Solo A	Levantamento	Nitrogênio (kg/t)	Fósforo (kg/t)	Potássio (kg/t)	pH	CTC (mmol/dm³)	Argila (%)	Silte (%)	Areia (%)
586	156.29	Laboratório C		08/20/2004	83.70	50.10	2.40	6.10	44.20	61	15	24
579	155.56	Laboratório C		08/20/2004	87.40	38.50	1.90	6.00	51.30	64	17	19
518	153.63	Laboratório C	Yes	08/20/2004	82.40	14.60	1.50		36.60	59	14	27
558	153.22	Laboratório C		09/12/2003	93.50	56.90	2.90	5.60	46.30	58	12	30
409	152.15	Laboratório B		09/12/2002	83.40	30.50	1.70		41.70	62	14	24
504	150.58	Laboratório C		09/12/2003	82.50	51.80	3.60	6.00	53.70	61	13	26
581	148.15	Laboratório C		09/12/2003	98.20	58.10	4.80	6.20	53.20	67	19	14
404	148.13	Laboratório B		05/20/2004	83.70	48.40	3.80	6.00	52.50	61	13	26
509	148.10	Laboratório C		08/20/2004	81.30	17.70	1.40	5.60	40.90	58	13	29
515	146.92	Laboratório C		08/20/2004	88.50	33.80	2.50		46.80	64	17	19
503	146.26	Laboratório C		09/12/2003	86.50	15.30	1.90		38.70	61	14	25
508	145.27	Laboratório C		09/12/2003	85.60	38.50	2.80		49.90	62	12	26
612	145.11	Laboratório C		09/12/2003	79.50	33.80	1.90		43.30	62	13	25
505	144.51	Laboratório C		08/20/2004	85.10	10.50	1.70		42.60	55	11	34
610	143.87	Laboratório C		08/20/2004	74.60	10.50	1.70	5.80	42.90	55	11	34
516	143.67	Laboratório C		09/12/2003	83.60	14.50	1.70		38.70	65	17	18
91	142.61	Laboratório A		03/27/2001	94.40	46.80	2.60		47.30	69	19	12
499	142.42	Laboratório C		09/12/2003	92.30	44.20	2.90		44.70	65	17	18
498	141.98	Laboratório C		08/20/2004	93.20	59.70	3.70		52.50	64	15	21