Message from the Management

Improving data quality

Dear Customers and Friends,

Many plantations today routinely record huge quantities of agronomic data, taking advantage of the processing power of modern computers to store and evaluate this data with the aim of adopting a more data-driven and "scientific" approach to plantation management. This idea is at the heart of agronomic management information systems like OMP and BMP.

While such programs have the power to quickly process thousands of data records to produce reports and charts, it is obvious that the information contained therein is only as accurate as the data which is initially entered into the database. If the base data set is inaccurate, this can render the whole program ineffective as it leads to managers losing faith in the program's reports and forms or, even worse, lead to wrong decisions being taken on the basis of erroneous data.

On the face of it collecting data may seem like a relatively simple proposition, but in practice there can be many problems which can cause inefficient data collection especially for data obtained from field surveys. A fundamental issue is that clear scoring systems have to be implemented to make sure that surveyed criteria are scored uniformly throughout the entire plantation or company. If this is not the case, then the resulting data can often be worthless for the purpose of comparing block performance or determining where action is required to improve poor field upkeep standards. Furthermore, for certain types of data it is important that the surveys are carried out at the same point or the same palm in every year to ensure that scores can be com-

pared reliably over successive year. This requires clear marking of the relevant palms or points, as well as supervision to ensure that the survey team really visits and surveys all the points that they are supposed to survey. In the case of leaf analysis data it is also crucial to ensure that the laboratory analysis itself is carried out to a consistently high standard with sufficient accuracy and precision. To this end the laboratory results must be regularly verified by cross-checking withother laboratories and by mixing in standard reference samples to check precision of the analysis.

With the OMP Fertilizer Planner, users can now utilize almost the entire OMP data set to generate effective fertilizer recommendations in a transparent manner. In particular, it is very easy to make use of field survey data such as for example the pruning or drainage statuses in the fertilizer recommendation ruleset. To help alleviate the problems collecting this type of data which were outlined above, we are currently developing a new OMP add-in as well as a data-collection app for smartphones or tablets. The add-in will allow users to define customized field surveys which are transmitted to the app together with the OMP block lists and pick-up list definitions. App users will be able to view descriptions and possibly pictures of each allowed survey score, helping to ensure that field scoring is done in a consistent way throughout the plantation. The app will support determining the survey point location by scanning QR codes (or NFC/

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RFID chips) which can be applied to specific survey palms or points. This not only simplifies data entry for the surveyor, but also makes it possible to check that the survey team really visited all required survey points. In the latter parts of this newsletter we will give a more detailed preview of the planned survey app and add-in.

In the past months the Agrisoft Systems team has been busy working on a significant upgrade to the OMP Fertilizer Planner application, which is scheduled for release in the coming months. In this update we have completely reworked the method of specifying the monthly spread of fertilizer application to use a rule-based application system. Furthermore, the new version will contain a new module for handling of immature areas in which the immature fertilizer programme can be specified as a function of months after

planting. Besides this, we have been busy with the development of the newest OMP version 8.8.5. In this new version we have redesigned the way planting information such as the planting and replanting dates, planting material and pre-planting seedling preparation is recorded. Other changes include improvements to the pest and disease module, the possibility to record farmer training records in OMP-SIS and various other smaller bug fixes and improvements. The changes in this new version are described in more detail in a separate article in this newsletter. Finally, the newsletter contains the usual section outlining a list of our current and upcoming development projects.

Yours sincerely,

Max Kerstan

OMP version 8.8.5

The new OMP version 8.8.5 contains various improvements with focus on the OMP-DBMS main application and the OMP-SIS smallholder add-in. The biggest change concerns the way in which planting information (for example planting dates, planting materials, planned replanting dates etc) are recorded in OMP. Whereas previously each yearly record in the OMP data set contained all the planting information, this basic data is now stored in a separate relational table with one row of data per block and planting date. This new system carries several advantages. One such advantage is that you can now view and edit the whole planting history of the block on the view and edit block data screens, see figure 1. Besides this, the new planting data model makes it much easier to detect and avoid data inconsistencies whereas in the old system it was for example possible for planting dates entered in different yearly OMP records to not match. This is particularly important for the immature fertilizer programme in the upcoming new version of the OMP Fertilizer Planner, which relies on consistent planting data to produce correct results.

In the OMP pest and disease module it is now possible to enter „unassigned" pest and disease surveys and control measures. This can be helpful in particular for pest surveys which are often carried out on a regular basis and not only when a certain pest event or outbreak has been detected. Specifically, the pest survey results can first be input or imported into OMP without being assigned to a particular event. If one or more blocks show signs of a pest outbreak, a new pest event can be created in OMP and the relevant survey results reassigned to the new event record. In this way, the records of surveys carried out in unaffected blocks can still be stored in the database without the blocks appearing to be part of a particular pest event. A further simplification regarding the pest and disease survey data import is that it is no longer necessary to separately import the list of affected blocks before importing the survey results, as the required records in the event block list will be automatically created during import. Data on pest or disease control measures is now stored in two separate tables for control measure recommendations and for

Figure 1: New planting data entry form.

What's New

Figure 2: New P&D survey entry form.

the actual application. Two new data entry forms (figure 2) were added for pest and disease surveys or control measures which can be used to quickly view, edit and reassign pest and disease survey or control measure data. Finally, a bug was fixed which caused chemical control measures to be wrongly inserted to the OMP Pesticide database when using OMP in fiscal year mode.

In OMP-SIS, the main addition in version 8.8.5 is a new set of data entry and view forms and an associated report for farmer training records.

The new forms and reports are found under the menu point „Surveys and training" together with the RSPO and field upkeep surveys. With these forms, it is now possible to keep a record of any training activities attended by each farmer, see figure 3.

Besides the main points described here, the new release also contains a large number of smaller additions and bug fixes. Please consult the what's new document distributed with the new setup files for details.

Figure 3: New data entry form for smallholder training records.

Preview

OMP Field Survey app and add-in

As discussed in detail in the "Message of the management" section, in order to obtain high quality field survey data it is important to ensure that the same things are being surveyed with the same standard of scoring throughout the plantation. In addition, it is very useful to have some kind of mechanism by which it can be ensured or verified that the surveys were carried out at the precise intended survey points. Both problems can be tackled by using a smartphone-based system of data collection in which the survey point locations are tagged for example using a QR code

Figure 1: OMP Field Survey app main menu preview.

which can be scanned with the smartphone and in which survey and response definitions can be defined centrally. An added advantage of this

system is that it avoids any necessity of manually transcribing data from paper data collection sheets into an electronic format, saving time and reducing the risk of mistyping anderrors during transcribing.

Agrisoft Systems is currently developing a field survey app as described above for android and iPhone operating systems. The app will be accompanied by a new specialized OMP add-in and will be integrated with the existing OMP database system. Figure 1 shows a draft of the main menu of the field survey app running on an android system.
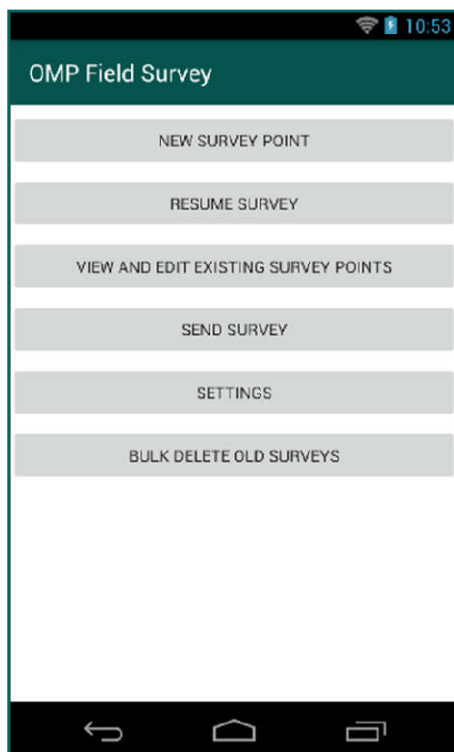
The OMP Field Survey add-in will not only store the data collected with the smartphone app, but will also serve as the application to manage all the definitions required for the survey app including survey and question definitions. While the add-in will always include a selection of default surveys with associated questions (see figure 2), users will have the possibility of defining custom questions and scores. When defining a new question, it will be possible to choose whether the response should correspond to a field of the OMP database or whether this is an additional "unbound" survey parameter. In the first case, definitions for the response data type and the allowed scores as well as possibly descriptions of the meaning/definition of each allowed score, will be taken directly from the OMP pick-up list tables. This will ensure that any data collected for this question can be transferred to the main OMP tables. In the second case, users will be able to define the question and restrictions on the allowed answers in a flexible manner.

Preview

Data transfer between the OMP Field Survey app and add-in will be based on emailing files with a particular extension, which are automatically generated and parsed by the respective applications. The OMP Field Survey app will be registered as the default handler for this file type on the smartphone operating system, so that app users only have to click on the attachment to parse the file whenever the OMP operator sends
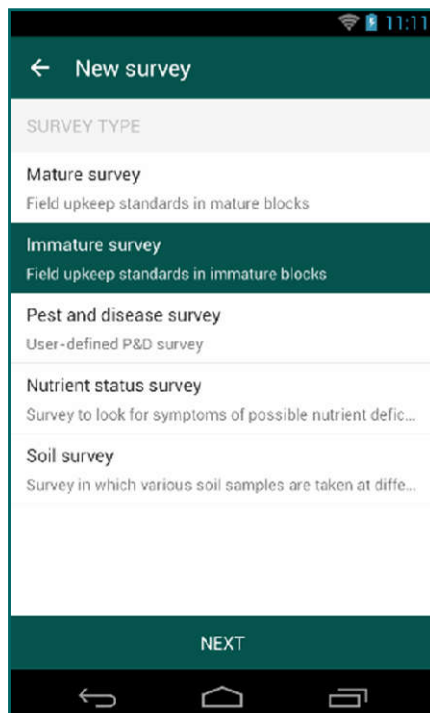

Figure 2: Choosing the type of survey to carry out.

out updated definitions. This simple system has the advantage of being robust and of not requiring any specific IT infrastructure like e.g. a dedicated web server to host the survey data.

To start surveying, users simply have to select the type of survey they want to carry out (figure 2) from the list of survey types that were defined in the OMP Field Survey add-in. This will take them to the main survey entry screen. Here the first task is to specify the survey point location

(figure 3). This can be don either by scanning a QR code attached to the survey point or palm, or by entering the data manually using drop-down lists of blocks and points specified in OMP in case no QR code system has been implemented. It is also possible to specify the survey point manually using a unique point name or using the palm row and number. Next the user enters the actual survey data for all the questions which are part of the chosen survey type. The app will support different types of entry controls including sliders, yes/no buttons, free entry fields and option pickers based on the question definition specified in
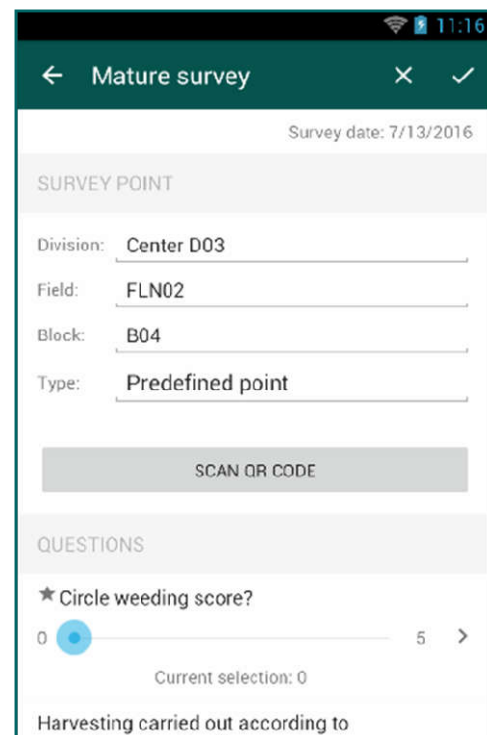

Figure 3: Choosing the survey location.

the OMP Field Survey add-in (figure 4). For questions using specific option pickers, the user will also be able to view detailed information and descriptions for each of the allowed scores.

The data collection app will include features to review and edit survey records which have al-

Preview

ready been entered (figure 5), in case there are any mistakes that need to be corrected. When ready, the survey results can be exported in the OMP Field Survey field format and sent by email to the recipients which have been set up in the OMP Field Survey data mailing settings. This should include the estate OMP operator, who can then import the survey results into the OMP Field Survey add-in.

Figure 4: Survey data entry.

Within the OMP Field Survey add-in, the OMP operator will be able to review results of each individual survey point. In case the survey type is to be carried out at certain predefined points, he will be able to review whether all predefined were covered during the survey. The raw survey results, which typically contain data collected from multiple points in each block, will be aggregated to block level using an aggregation method suitable to the data type of each question (average or mode).

The OMP Field Survey add-in will allow the user to select a set of survey results and to directly update the associated fields in the main OMP database using this survey data. Note that the main OMP database should only be updated in

Figure 5: Reviewing existing survey records.

this manner if the survey was carried out by a trained and trustworthy survey team (e.g. in the context of the annual leaf sampling process). Results of other regular field surveys carried out by field staff with less agronomic training or experience can be reviewed and analyzed in the OMP Field Survey add-in but should typically not be used to update the main OMP database without additional checking.

We are confident that the new OMP Field Survey add-in and smartphone app together will provide a highly flexible and powerful data collection tool which will be useful in a wide variety of situations.

From the developers desk

A selection of the on-going developments and plans which are part of our constant efforts to continue to improve Agrisoft products.

OMP-DBMS

- Addition of a new class of yield histogram charts
- New monthly dashboard reports at division and field level
- Redesigned module for defining and editing pick-up list definitions and allowed scores
- New module for importing data from Excel with greatly improved data verification features
- New fertilizer summary reports with option of choosing the display unit
- New chart to compare YTD yield with YTD yield of previous years
- Improved pest and disease DA forms and reports
- Option of entering monthly evapotranspiration manually for more detailed water deficit calculation

OMP-Field Survey

- New OMP add-in and smartphone app for field data collection
- Flexible definition of questions and survey types
- Possibility of determining survey point locations by scanning QR codes or by manual entry
- Implementation of data restrictions and lists of allowed scores
- Descriptions for each allowed score to ensure consistent scoring
- Email-based data transfer between app and add-in
- Possibility to update main OMP data set using scores from selected field surveys

BMP Field Work Module

- Flexible definition of field work jobs with material, equipment and labor requirements
- Specification of pesticides and their composition in terms of active ingredients
- Budget generator wizard based on job frequency and round length
- Assignment of cableways to field work groups with similar requirements
- Manual editing options for field work schedule
- Calculation of overall material, equipment, chemical and labor budgets for field work