



Agrisoft Systems NEWSLETTER

Fifty-first edition, Oct.— Des. 2024

Message from the Management

A look back at 2024 and outlook for the coming year

Dear Customers and Friends,

The Agrisoft Systems team would like to wish you all the best for the new year. As usual in our new year's edition of the newsletter, we take a look back at the most important things that happened at Agrisoft Systems in the past year and discuss some of our ideas and plans for 2025.

2024 was a year of various interesting projects and close cooperation with our customers. One particular highlight of the year was the TCCL Yield Intensification Workshop held in Wye in May/June. Besides the many interesting presentations it was a great pleasure to meet and share experiences with the participants from around the world including many existing OMP users.

On the development side, the main milestone of the year was the release of OMP Plantation version 10.4, already explored in detail in previous editions of this newsletter. The main focus of this release was the new module for field work and resource use. With this module, you can now define a list of all kinds of jobs that are routinely carried out in the field (e.g. pruning, circle weeding, fertilizer application, pest control etc.). Groups of blocks with similar field upkeep requirements can be grouped together into "field upkeep units". For example, you might define separate field work units for immature and mature blocks or for terraced blocks vs flat lowland blocks, as each have different upkeep programmes. OMP Plantation 10.4 includes functionality to generate a monthly field work schedule by month, job and block based on defining the desired cycles or rounds within each field

work unit and job. So for example, you might specify that there should be two rounds of pruning within a certain field work unit, one round between April and May and the other one between October and November. OMP would then loop



schedule the jobs in the individual blocks within each month in such a way that it follows the order defined by the block field work index and that the total area to be covered is roughly equal for all the months within a round. Of course, the monthly field work schedule by block can also be entered or edited manually or via import from Excel. Recording of actual field work carried out is based on the area covered by date, block, job and work team ID. Several data analysis forms and reports are available to view the field work schedule and compare actual progress vs the schedule.

For each field work job, you can enter expected resource usage rates for all kinds of resources including labor, fuel, materials and equipment. For normal jobs, these rates can be entered on a per ha, per p or per block basis. For fertilizer or pesticide application jobs you can additionally define a resource used per ton of fertilizer or pesticide to be applied, while for harvesting jobs certain resource requirements can be entered per ton of fruit. Using these rates and the field work schedule for each job, OMP Plantation calculates the resource budget by block and month. For fertilizer application jobs the calculation is



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based on the monthly fertilizer recommendations, whereas for harvesting jobs the system uses the monthly crop budget as a basis. Recording for actual resource use by date is flexible in terms of the spatial or job fields that can be entered. Just like for the pure field work part, data analysis forms and reports are available to monitor the actual resource use vs the budget. We are confident that this new module will become a useful tool for our customers in particular for scheduling and planning field work operations as well as for monitoring use of key resources such as fuel.

In addition to these core features, several other improvements were introduced. A new spatial grouping level, referred to as "plantation," provides additional organizational flexibility and allows users to categorize and manage data more effectively. Production data analysis was enhanced with extra grouping options and display parameters, offering a more tailored approach to viewing and interpreting key metrics. Users can now choose to view year-to-date (YTD) values rather than individual monthly totals when comparing fertilizer actuals versus recommendations, allowing for a more comprehensive perspective on fertilizer application trends. New reports and analysis forms focusing on nutrient application versus recommendations have been added, giving users deeper insights into how nutrient usage aligns with agronomic guidelines. We also made improvements to the definition and encryption of user passwords, enhancing the overall security of the system. GIS capabilities were expanded with the addition of new maps, and users can now save custom layers directly in the back-end database, ensuring that critical geospatial data is preserved and accessible. To further enhance integration with external systems, we developed a back-end API that covers main daily transac-

tional tables, including production, fertilizer, and pesticide applications. This API simplifies data exchange and supports more seamless workflows between OMP Plantation and other enterprise systems.

Looking ahead to 2025, one major project will be developing a module dedicated to monitoring oil extraction rates (OER) and minimizing mill losses. This initiative aligns with our broader goal of helping plantations maximize yield and reduce inefficiencies at every stage of the production process. The new module will introduce comprehensive tools for comparing oil output to fresh fruit bunch (FFB) harvest, tracking loss rates during the milling process, and establishing the actual overall oil content in the bunches through detailed bunch analysis. One of the key aspects of this module will be the ability to conduct bunch grading at mill ramps or directly in the field. By classifying bunches as ripe, underripe, or overripe, plantation managers will be able to identify patterns and make informed decisions that improve overall OER. Where possible, the system will also provide features to correlate these findings with factors such as palm age, planting material, and seasonal variations. The overall aim of the module will be to improve our understanding of the source of variations in the oil extraction rate which is just as crucial as the FFB yield in determining the actual final oil yield of our plantation. If the OER declines, is it an issue at the mill where some problem is leading to high losses? Or is the problem in the bunches themselves, that the actual average bunch oil content has dropped due to some external factor such as a changing palm age profile? Or is the bunch oil content of perfectly ripe bunches ok but there are too many over- and underripe bunches being delivered to the mill? Monitoring each of these components individually will enable plantation



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managers to better understand variations in their OER and to implement corrective measures where required.

Alongside the development of this major new module we will be continuing with various other projects, and will most likely also release another intermediate version of OMP Plantation with smaller improvements and additions. These include a wide range of topics including things that have been requested by our customers. For example, the next version of OMP will include automatic synchronization of the monthly and daily production data tables with full support for data entry at either time level. This will make it much more convenient for users updating their daily production data automatically from a third party weighbridge or ERP system. We will also extend the back-end APIs to support synchronizing the most important picker definitions and master data. In the OMP Field Survey module, we are adding support for using the number of surveyed points in user-defined expressions. Furthermore, it will be possible to import results using Excel sheets with questions in columns rather than rows. We are also continuing development of a web API alternative to the current file-based system of transferring OMP Field Survey definitions

and results. Another ongoing project that we will aim to progress with is the AI image recognition model for identifying and counting abnormal and normal palms from drone images. Within the main OMP application we are adding a new field to record the water table depth at block level. Finally, we are working on adding an option of using an alternative calculation method for the water deficit following the method of Thornthwaite and Mather. With water stress and droughts becoming ever more frequent and severe in the context of climate change, water deficit monitoring and understanding how exactly the water deficit impacts the yield is only becoming more important.

At the start of this new year we would also like to take the opportunity to express our sincere gratitude to our clients and partners. Your support, feedback, and collaboration have been instrumental in shaping our products and guiding our development efforts. We are excited about the opportunities that lie ahead and look forward to continuing this journey together in 2025.

Yours sincerely

Max Kerstan





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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.

General improvements

- Report for the number of blocks and area where a certain pesticide was applied per month
- Add option of grouping by plantation on additional forms and reports
- Function for “number of points surveyed” in OMP Field Survey expressions
- Add chart report combining multiple charts on climate parameters
- Function to copy field work rounds and job definitions between different years
- Portuguese language version of OMP
- Block-level field for water table depth
- New fields for relative humidity in OMP climate data
- Improved planning for tasks leading up to replanting
- Consistency check to avoid exceeding license area when importing new blocks
- Functionality to run passthrough queries in OMP Query Writer

Oil extraction module

- New module focusing on oil yields, oil extraction rates and milling losses
- Overall OER monitoring by comparing oil output to FFB harvest
- Recording of mill loss rates at different stages of the milling process via direct measurement of losses
- Control charts and monitoring tools for mill losses
- Bunch analysis results for individual sample bunches for OER benchmark
- Bunch grading (e.g. ripe, underripe, over-ripe bunches) at mill ramp or in the field
- Correlation of different results with each other and where possible with other field/block parameters e.g. palm age, planting material, seasonality

Integration of daily and monthly production

- Automatic updating of aggregated monthly data when any daily production data is entered
- Implementation via back-end triggers requires no manual action by the operator
- Support for primary data entry either at monthly or daily level
- Handling and special data migration as part of the version update.
- Addition of a new system setting to choose whether the monthly harvest round length should be based on average or maximum of daily harvest rounds.