



Agrisoft Systems NEWSLETTER

Twenty-second edition, Apr.— Jun. 2017

Message from the Management

OMP Milestones

Dear Customers and Friends,

Over the past months, we have been working hard to finalize OMP version 9.0, which is now being released to all our MUA customers. This version represents a major milestone in the development of OMP from both a technical and a user perspective. The most striking change from a user's perspective is the redesigned menu structure and user interface of the main OMP application. The new menu is thematically grouped, meaning that all forms and functions relating to a specific aspect of OMP (e.g. production, fertilizers or climate data) can be found in one place. Besides making navigation within the program simpler and more intuitive, this also paves the way for further integration of the various OMP add-in programs. The standardized user interface helps to improve readability and usability of all data analysis forms and reports. Of

course, the new version also includes many new data analysis features and reports. For example, a new extended version of the Block Agronomic Summary report and the new Site and Soil Overview report provide more detailed data for field vis-



its. A large number of new data recording fields have been added, ranging from more detailed field upkeep scores (e.g. circle weeding, path weeding etc.) over LCP nutrient deficiency scores to additional climate parameters like PAR and tensiometer readings. New daily reports and GIS maps for the days since last harvest in each block greatly enhance the functionalities for monitoring the daily harvesting process. A far more comprehensive look at the new features in OMP 9

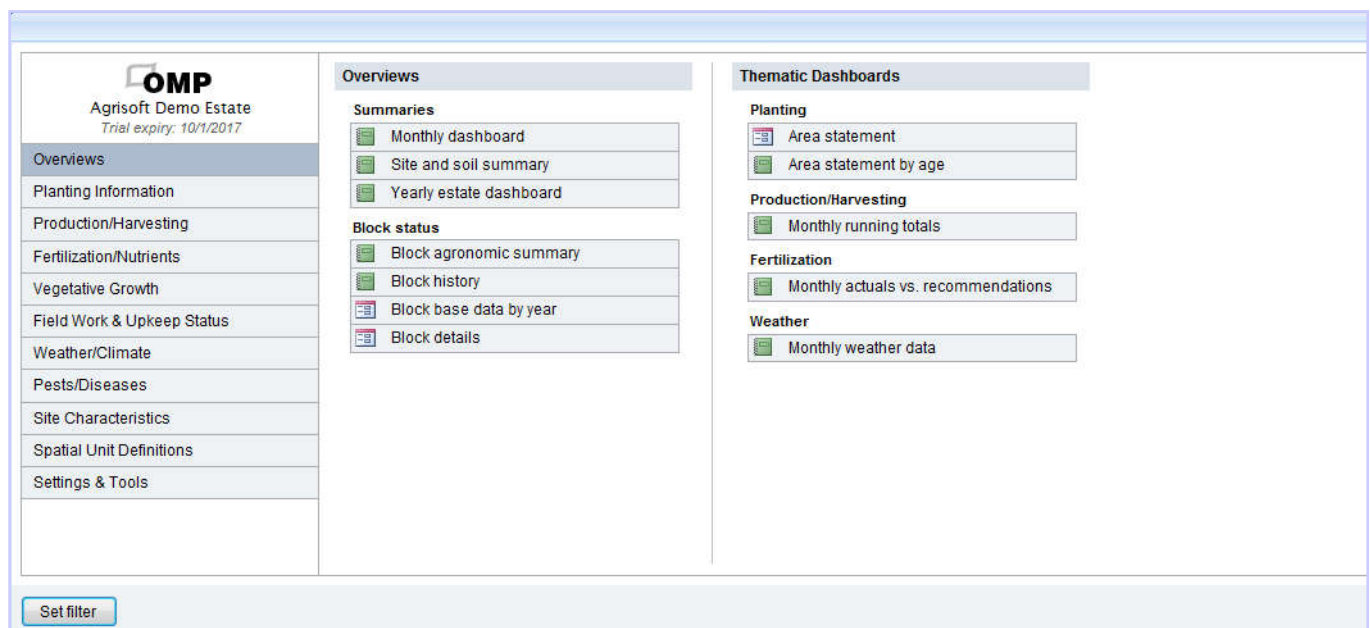


Figure 1. OMP9 Main Menu



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can be found in the dedicated feature article in previous versions of this newsletter.

While OMP 9 is clearly a big step forward in terms of the user interface, perhaps the most significant changes actually took place “under the bonnet”. In this version we have implemented major changes to the data structure of the application and the way forms and reports are generated. These changes greatly increase the maintainability and extendibility of the application. As such, they are crucial to pave the way for the next major steps with OMP, namely the addition of the OMP Field Survey add-in and Android app for data collection as well as the move to a consolidated SQL Server database for all OMP add-ins.

Over the last quarter, the OMP user community has continued to grow with new OMP installations in East Kalimantan and Peru. In this context

our team carried out installation and training visits to both sites. We look forward to continue working closely with our new and old customers to help them meet the individual challenges they face.

This edition of the newsletter includes an interview with Dr. Thomas Fairhurst of Tropical Crop Consultants Ltd. Dr. Fairhurst is one of the leading experts on oil palm agronomy and yield improvement in the world, and has been closely cooperating with Agrisoft Systems since the earliest days of OMP. We are grateful that he has agreed to share some of his thoughts on and experiences with OMP and the milestones of OMP development in the past.

Yours sincerely,

Max Kerstan



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Interview with Dr. Thomas Fairhurst

Dr. Thomas Fairhurst of Tropical Crop Consultants Ltd is one of the leading experts for oil palm agronomy and yield intensification in the world. He has over 30 years of experience with tropical plantation management in general and oil palm in particular, especially in Papua New Guinea, Indonesia and Malaysia. From 1996 to 2003 Dr. Fairhurst was Director for the East and South-east Asia Programs at the International Plant Nutrition Institute (IPNI) in Singapore, while from 2003 to 2008 he was Director of Agriculture at Cargill CTP Holdings. In 2008, he founded Tropical Crop Consultants Ltd and has since then been supporting plantations and yield intensifications around the world in a consulting capacity. He has been using OMP for many years and has strongly influenced the development of the program with his feedback, so we are grateful for the chance to chat with him about his experiences and thoughts regarding OMP and the challenges for oil palm agronomy.



Thomas, thanks for agreeing to this interview. So, you've been involved with OMP from the beginning, could you please just briefly summarize your history with OMP?

We started in 1990 when I got a job with GIZ in the Ophir project in West Sumatra. It was a five thousand hectare project with two thousand five hundred farmers. There was a huge amount of data on plantation agronomy and scattered information from the smallholders that was con-



Figure 1. Armin Gfroerer Kerstan, Thomas Fairhurst and Ian Rankine at an early OMP Presentation

tained in old ledger books and some spreadsheets. It seemed obvious that you could bring it all together and make it into a data resource that could be properly managed and then analyzed. The next step was meeting Armin Gfroerer, your father, who was also working in the project. He was coding in dBase III, I think it was then, with Clipper. And so we started a project to develop a database system to store the data. I think that was our key first good decision, to use a database and not spreadsheets because a spreadsheet cannot conveniently handle multiple years of data for different spatial units and many different parameters. So we developed the first edition of OMP in 1990 and it was installed in the project by 1991. After we started to use it we very quickly managed to assemble records for this project starting from 1985, I think it was, when the harvesting started until 1990. This gave us a good data source and we could really use it actively in the field. Another key input came from my backstopping consultant, Helmut von Uexküll from the International Plant Nutrition Institute in Singapore. When he heard that we were trying to organize the data properly he told



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us of the Harrisons and Crossfield clip cards, which were a paper system designed to store agronomic data over multiple years for individual blocks or spatial units. He brought along examples of the clip cards so that we had a very solid guide in terms of designing the initial layout of the database, the fields to be recorded and, you know, different ways of recording different pieces of information in terms of pickup lists or numeric values or text fields and so on. So that was a piece of serendipity, really, that we had access to the clip cards which I didn't know about at that stage, Armin's ability in programming in early versions of DBase and then my knowledge of the basics of the agronomic side to contribute to the mix.

Figure 2. Clip card produced by Harrisons and Crossfield in the 1960s.

Very interesting, so in some ways OMP actually goes back even further than thirty years if you count the many years of experience that went into the clip card design of Harrisons and Crossfield. Obviously you were one of the people who noticed the need for some kind of data storage and data analysis system for oil palm plantations even back then. How do you think that has changed over the past thirty years, es-

entially, of OMP life, or has it changed at all? Do you still see the same need today?

Well, going back to the clip cards, which were designed by people like Eric Rosenquist and Harrisons and Crossfield, the idea for such a data storage system goes way back. I think they had been in existence for at least ten or perhaps twenty years in Harrisons and Crossfield. So the point was to get all the data stored in a safe, stable and sustainable way and then to be able to make use of the data in various kinds of data analysis and reporting that would enhance your field work. So the original clip cards, because you could punch holes around the perimeter of the clip card, you could sort the data with different fields. For example, you had three holes for different classes of topography, each card was clipped in a different position, so that you could insert a needle and filter out a set of cards. And that's essentially what we also replicated with OMP with the filtering system. As the OMP evolved, many things were refined and improved like the block nutrients report, which shows the history of an individual block for five years for production, fertilizer use, leaf analysis, vegetative measurement and background information. Over the years, of course, a wide range of reports on production, leaf data, pest and disease and so on were added. But the way the program's moving forward now in a very dramatic way, I think, is, first of all, improving the management's capacity to collect data in a verifiable and very organized way in terms of field surveys. It could be for field audits, it could be for leaf sampling, pest and disease census, and so on. So by using a smartphone in conjunction with barcode labeling on datum points, it's possible to get tightly verifiable data in the field now. This system and the new add-in or the new tool in OMP where the data can be summarized and imported into OMP is going to be a huge advantage.



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And the other major step forward is going to be when the field work or resource use efficiency module is introduced. Up until now we've always focused on agronomy -- the agronomics in a way of yield intensification -- without really addressing the practical aspect of how to organize labor budgets and monitor the use of labor and other resources in the plantation. So the field work module is going to be a huge step forward where we'll be able to make plans for resource use whether it's labor, machinery or materials, and then monitor the use of the resources and calculate performance data. This will be helpful to management to preempt overrunning budgets because once you see that the physical performance, labor performance or material use, is out of kilter with the budget you can take action immediately. The normal thing is to wait until the end of the month and get your financial performance, which is, of course, dependent on physical data and by that time, the damage has already been done.

You've pretty much answered two of my questions there in one go, as I was going to ask you, what the direction of future development for OMP in the short term should be in your opinion. I think you've just answered that with the addition of OMP Field Survey and the field work/resource use efficiency module. So what you're saying is that one of the big differences now compared to early versions of OMP is that in the beginning OMP was really focused on agronomy and analyzing past data to draw lessons for the future, whereas now it's really moving also into the field of day to day process control and, active plantation management. Well, obviously before that as well but especially in the last ten years since you've started Tropical Crop Consultants you've had, extensive experience with plantations all over the world

including plantations using OMP and plantations not using OMP. What do you feel is the difference, or do you see a difference between companies who do have a system like OMP -- i.e. a proper data analysis system - and those who don't?

Oh absolutely. Well, first of all, as far as carrying out consulting services for a company, to me it doesn't really make sense to do that kind of work without a reliable data source. If you're working without reliable data a lot of your recommendations are just opinions without supporting evidence. Data provides you with evidence to support your recommendations and that, to me, is important even from an ethical perspective because, you know, making recommendations which are just unproven opinions can easily lead to misleading the client. So for that reason, really, I insist that all the Tropical Crop Consultant clients use a database system to manage oil palm agronomic data and since OMP is, so far, the only program available on the market my clients tend to use OMP. The difference the data makes is that when you're walking the field you have portable data available either in printed reports or nowadays more and more on a tablet. This means that when we walk through the field we can check for example background information about the soil type, possibly even what's





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been the latest rainfall and other climate parameters. And then to think about how efficient has the harvesting been organized in terms of harvest interval control? What about the yield history for the block? Have the fertilizer recommendations been implemented correctly in the past? What's happening with leaf nutrients status and how does the leaf nutrients status relate to past fertilizer use? Is there, for example, evidence that past higher applications of phosphate may have improved leaf phosphorus status and so on. Of course also looking at vegetative growth measurements to get a picture of the block. So we triangulate between what we can see in the field, what we hear from the management and what we read in the synthesis reports which bring all the agronomic data together.

Okay, thank you. As a final question, what do you think are the big challenges coming up in the future for the oil palm industry and what do they mean from the view point of OMP?

The challenge in the oil palm industry is basically the opportunity for OMP. I think the two are linked because after a period of very rapid expansion of oil palm plantings in Indonesia, Ma-

laysia, parts of Latin America and Africa it's very clear that endless expansion is neither possible nor recommendable because most of the areas that remain suitable for oil palm are covered in forest and that shouldn't be disturbed. At the same time, because of worldwide population growth and economic development the demand for palm oil is for sure going to rise over the next thirty years, as has been predicted in many published scientific papers. So we know that the demand is going to increase and we know that area expansion is going to be difficult and certainly not desirable where it impinges on forest conservation. The only alternative, really, to expand production without area expansion is to increase yields and yield improvement is something you can only achieve if you've got reliable data to measure what you're doing in the field. As the old saying goes, you can only manage what you measure. So the oil palm yield intensification that Tropical Crop Consultants emphasizes all the time in field visits is totally dependent on having reliable data to measure whether your recommendations are effective or not.

Thank you very much for your time.

