Agrisoft Systems
NEWSLETTER
Fifty-seventh edition, Apr.— Jun. 2026

Message from the Management

News from Agrisoft Systems

Dear Customers and Friends,

Over the past quarter, our main development efforts have continued to focus on OMP Mill, which is making steady progress towards its first beta release. While much of the earlier work concentrated on building the application's foundation, recent development has increasingly focused on the features that users will see and use every day.

A significant milestone has been the completion of much of the common functionality that forms the basis for data analysis and data entry throughout the system. This provides a consistent and intuitive user experience, while allowing new analyses and data entry screens to be developed much more efficiently. With these core components now largely in place, development is increasingly shifting towards the implementation of the business-specific functionality that will make OMP Mill a powerful tool for mill management and analysis.

Alongside this, development has of course also continued on the OMP Plantation side with various bug fixes and smaller improvements to existing analysis and reporting functionality. The web service functionality to transfer data between OMP Field Survey program and mobile app that we have been working on is almost ready to enter testing stage.

Supporting our customers remains an important part of our daily activities. During the past months we have assisted new customers with installations and user training, while continuing to help existing users with system integrations, customised reports, and advanced data analysis to meet their operational requirements.

To further improve our support services, we have recently introduced a new central Agrisoft Support WhatsApp account at +62 851-8783-8585. This dedicated support channel enables us to manage customer enquiries more efficiently and helps improve responsiveness, particularly when coordinating support across different time zones.

In this edition's feature article, we take a closer look at nutrient management in OMP. From maintaining soil fertility and recording leaf and rachis analysis results to generating fertilizer recommendations and monitoring compliance with fertilizer application programmes, OMP provides a comprehensive set of tools to support one of the most important aspects of plantation management.

As always, we would like to thank all our customers and partners for their continued support and valuable feedback, which plays an important role in guiding the ongoing development of our software solutions.

Warm regards,
Max Kerstan

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Feature

Nutrient Management in OMP

Maintaining an adequate nutrient supply is one of the key requirements for achieving high and sustainable oil palm yields. However, developing an effective fertilizer programme is far from straightforward. Natural soil fertility varies between sites, nutrient requirements change with palm age and yield level, and fertilizers represent one of the largest operating costs in plantation management. Sound nutrient management therefore depends on making well-informed decisions based on reliable field and laboratory data.

OMP provides a comprehensive range of tools to support every stage of the nutrient management process, from assessing nutrient status and identifying deficient areas to generating fertilizer recommendations and monitoring their implementations. Here, we provide an overview of some of the main OMP features available for supporting nutrient management.

Assessing Soil Fertility

The first step in nutrient management is to understand the nutrient status of each block. OMP allows various types of soil information to be recorded and analyzed, providing a solid foundation for fertilizer planning. Some of the information available includes:

- Soil type and soil texture assigned to each block.
- Soil analysis records by sampling zone and sampling depth.
- Soil deficiency scores for the main nutrients (N, P, K, and Mg) to facilitate comparisons between blocks.

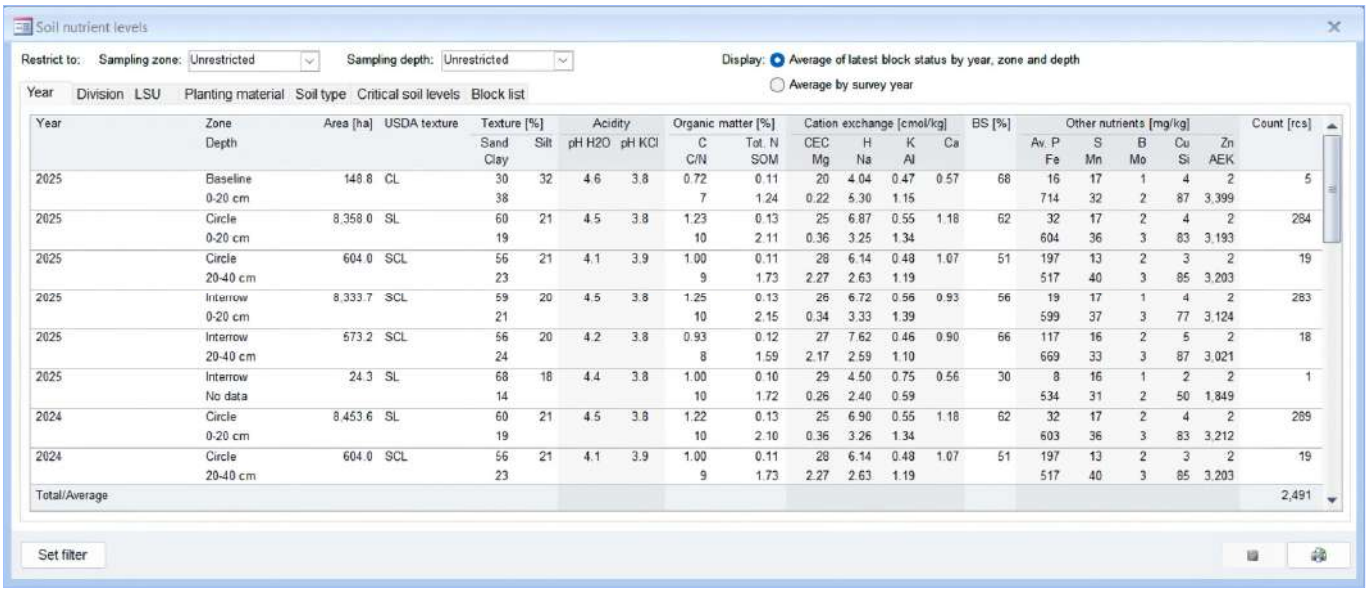

Figure 1. Soil Nutrient Levels

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OMP Report – Critical soil levels

DEMO

No filter active.

Latest status as of: 2025

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Survey results older than 5 year(s) are ignored.

Distribution of areas

	Area [ha]		# Blocks	
	Total	Sampled	Total	Sampled
Total	**12,739.2**	**8,333.7**	**549**	**283**
Mature	12,696.9	8,333.7	546	283
Immature	42.3	0.0	3	0
Under replanting	0.0	0.0	0	0
Not yet planted	0.0	0.0	0	0

Criticals

Parameter	Critical level	# Blocks			Area			Description
		Sampled	Critical		Sampled	Critical		
				%	ha	ha	%	
Texture								
Sand	> 50.0 %	283	216	76.3	8,333.7	6,373.3	76.5	Leaching losses are likely to be large. Important to return crop residues to replenish SOM, improve nutrient retention and soil moisture availability
Silt	> 45.0 %	283	0	0.0	8,333.7	0.0	0.0	Drainage problems likely. Large cation exchange capacity if clay is made up of 2:1 clay mineraks. Large capacity to increase SOM.
Clay	< 30.0 %	283	241	84.8	8,333.7	7,064.3	84.8	Poor nutrient content; poor soil moisture retention; difficult to increase SOM
Acidity								
pH H2O	< 4.5	283	158	55.8	8,333.7	4,583.2	55.0	Liming may be required. No advantage from liming to pH > 5,5
pH KCL	< 4.2	283	275	97.2	8,333.7	8,067.7	96.8	Liming may be required. No advantage from liming to pH > 5,5
Organic matter								
C	< 1.50 %	283	220	77.7	8,333.7	6,468.8	77.6	Poor nutrient retention, poor indigenous N supply. Poor soil phisical properties (e.g., moisture availability, workability)
Tot. N	< 0.20 %	283	269	95.1	8,333.7	7,884.4	94.6	Poor indigenous N supply
Cation exchange								
ECEC	< 10.00 cmol/kg	283	94	33.2	8,333.7	2,784.1	33.4	Poor cation retention. SOM is an important source of cation exchange
K	< 0.200 cmol/kg	283	10	3.5	8,333.7	259.1	3.1	K deficiency likely. K inputs (fertilizers, FYM) required
Ca	< 0.500 cmol/kg	283	84	29.7	8,333.7	2,302.7	27.6	Ca deficiency likely. Ca inputs (fertilizers, FYM) required
Mg	< 0.300 cmol/kg	283	169	59.7	8,333.7	4,906.3	58.9	Mg deficiency likely. Mg inputs (fertilizers, FYM) required

Figure 2. Critical Soil Levels Report

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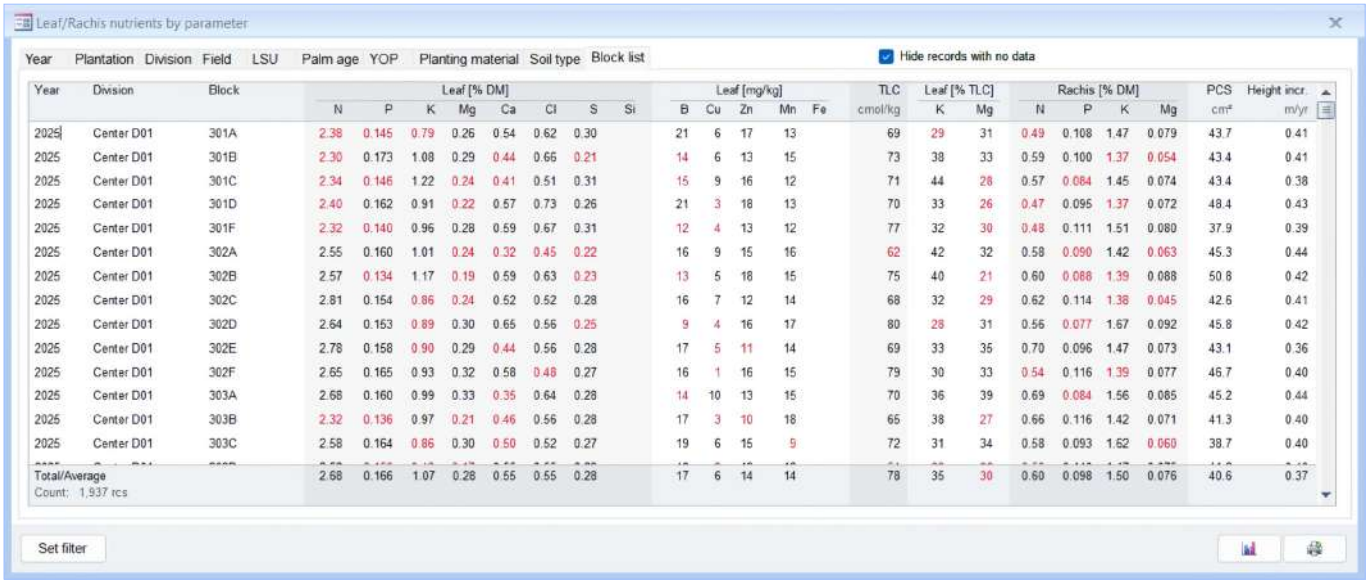

Figure 3. Leaf/Rachis Nutrients by Parameter

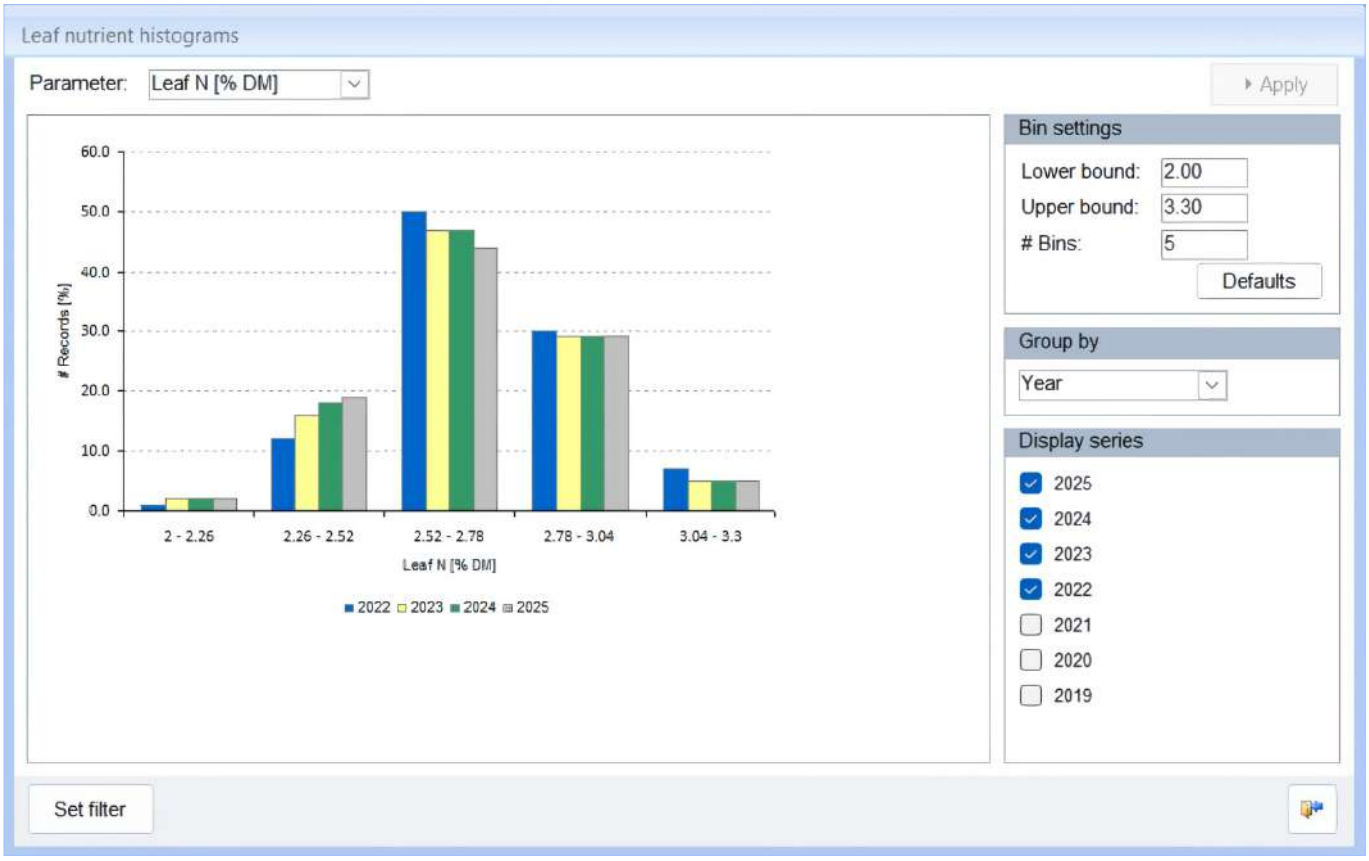

Figure 4. Leaf/Rachis Nutrients Histogram

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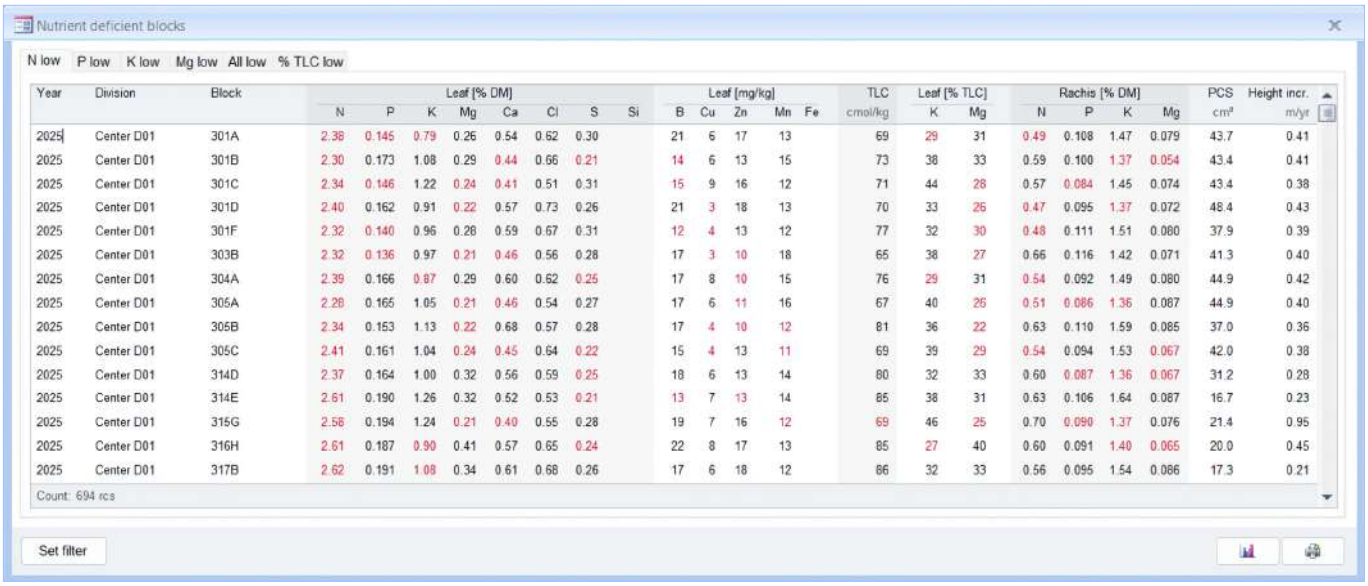
- Identification of areas where soil nutrient status may require further investigation.

Monitoring Palm Nutrient Status

Once palms reach approximately three years of age, leaf and rachis analysis become one of the most important sources of information for nutrient management. Rather than considering individual sampling events in isolation, OMP stores historical records, allowing plantation managers to monitor changes levels over multiple years. The system includes several forms and reports for analyzing leaf nutrient data, including general nutrient level summaries and histogram charts that help visualize the distribution of nutrient concentration across the plantation.

Critical nutrient levels can be defined according to palm age. Where available, these values should preferably be based on fertilizer trials conducted within the plantation. Alternatively, published trial results or established reference values from similar growing conditions may be used. Once critical levels have been defined, OMP can identify blocks where nutrient concentrations fall below the selected thresholds, allowing managers to focus attention on areas most likely to benefit from corrective fertilizer applications.

Laboratory analysis provides valuable information but it's important to be aware of its limitations and potential sources for error. Leaf sampling requires careful collection procedures, while precision and accuracy of laboratory analysis may also vary. Therefore, effective nutrient management should include field observations and corroboration with other sources of information wherever possible.



Year	Division	Block	Leaf [% DM]								Leaf [mg/kg]					TLC	Leaf [% TLC]		Rachis [% DM]				PCS	Height incr.
			N	P	K	Mg	Ca	Cl	S	Si	B	Cu	Zn	Mn	Fe	cmol/kg	K	Mg	N	P	K	Mg	cm²	m/yr
2025	Center D01	301A	2.38	0.145	0.79	0.26	0.54	0.62	0.30		21	6	17	13		69	29	31	0.49	0.108	1.47	0.079	43.7	0.41
2025	Center D01	301B	2.30	0.173	1.08	0.29	0.44	0.66	0.21		14	6	13	15		73	38	33	0.59	0.100	1.37	0.054	43.4	0.41
2025	Center D01	301C	2.34	0.146	1.22	0.24	0.41	0.51	0.31		15	9	16	12		71	44	28	0.57	0.084	1.45	0.074	43.4	0.38
2025	Center D01	301D	2.40	0.162	0.91	0.22	0.57	0.73	0.26		21	3	18	13		70	33	26	0.47	0.095	1.37	0.072	48.4	0.43
2025	Center D01	301F	2.32	0.140	0.96	0.28	0.59	0.67	0.31		12	4	13	12		77	32	30	0.48	0.111	1.51	0.080	37.9	0.39
2025	Center D01	303B	2.32	0.136	0.97	0.21	0.46	0.56	0.28		17	3	10	18		65	38	27	0.66	0.116	1.42	0.071	41.3	0.40
2025	Center D01	304A	2.39	0.166	0.87	0.29	0.60	0.62	0.25		17	8	10	15		76	29	31	0.54	0.092	1.49	0.080	44.9	0.42
2025	Center D01	305A	2.28	0.165	1.05	0.21	0.46	0.54	0.27		17	6	11	16		67	40	26	0.51	0.086	1.36	0.087	44.9	0.40
2025	Center D01	305B	2.34	0.153	1.13	0.22	0.68	0.57	0.28		17	4	10	12		81	36	22	0.63	0.110	1.59	0.085	37.0	0.36
2025	Center D01	305C	2.41	0.161	1.04	0.24	0.45	0.64	0.22		15	4	13	11		69	39	29	0.54	0.094	1.53	0.067	42.0	0.38
2025	Center D01	314D	2.37	0.164	1.00	0.32	0.56	0.59	0.25		18	6	13	14		80	32	33	0.60	0.087	1.36	0.067	31.2	0.28
2025	Center D01	314E	2.61	0.190	1.26	0.32	0.52	0.53	0.21		13	7	13	14		85	38	31	0.63	0.106	1.64	0.087	16.7	0.23
2025	Center D01	315G	2.56	0.194	1.24	0.21	0.40	0.55	0.28		19	7	16	12		69	46	25	0.70	0.090	1.37	0.076	21.4	0.95
2025	Center D01	316H	2.61	0.187	0.90	0.41	0.57	0.65	0.24		22	8	17	13		85	27	40	0.60	0.091	1.40	0.065	20.0	0.45
2025	Center D01	317B	2.62	0.191	1.08	0.34	0.61	0.68	0.26		17	6	18	12		86	32	33	0.56	0.095	1.54	0.086	17.3	0.21

Count: 694 rcs

Figure 5. Nutrient Deficient Blocks

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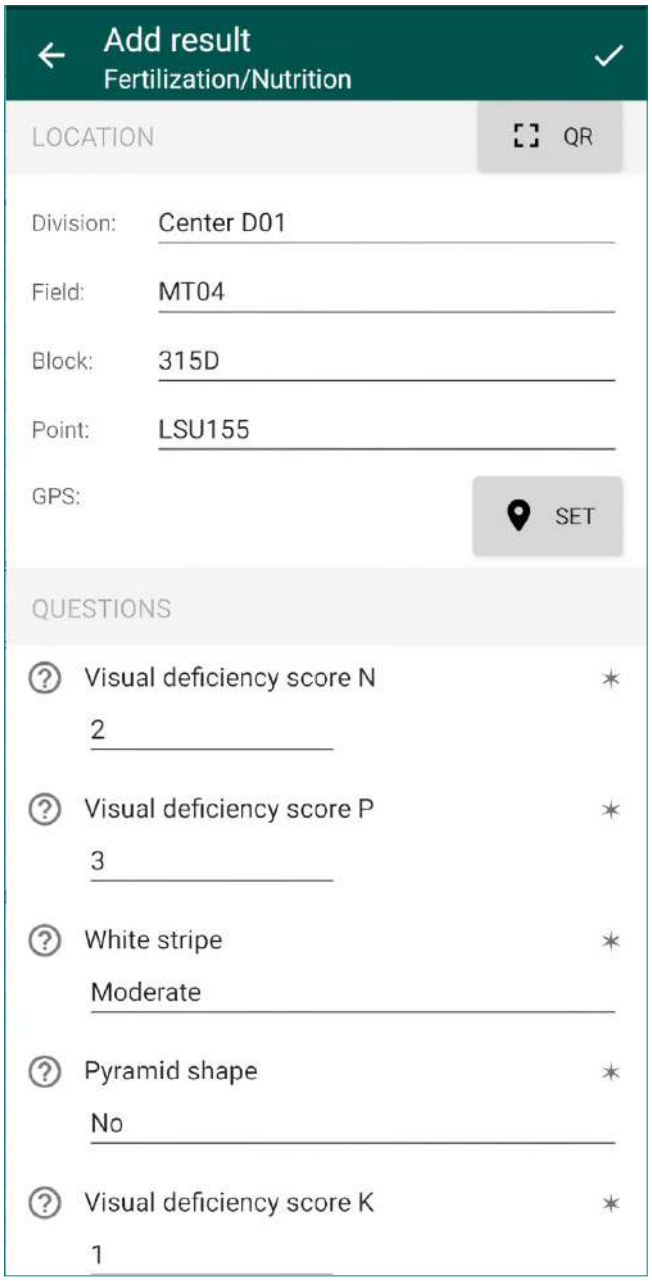

Figure 6. Data collection using OMP FS app

OMP supports surveys of visual nutrient deficiency symptoms through the OMP Field Survey mobile application. Survey results can be analyzed through distribution maps and summary reports, allowing plantation managers to monitor the occurrence and development of visual nutrient deficiencies over time and compare these observations with laboratory results.

Monitoring Fertilizer Application with OMP

Once soil information, leaf analysis and field survey results have been reviewed, the next step is to develop an appropriate fertilizer programme that meets the nutrient requirements of each planting block.

The OMP Fertilizer Planner (OMP-FP) enables users to create fertilizer scenarios based on their preferred nutrient management strategy. Fertilizer recommendations may be generated using corrective nutrient applications for deficient blocks, nutrient balance calculations, or fertilizer response curves derived from fertilizer trials. Based on the selected strategy, OMP automatically calculates the nutrient requirements of each block and determines the optimum fertilizer recommendation required to supply those nutrients.

OMP also recognizes that nutrients may be supplied through organic materials in additions to mineral fertilizers. When planned applications of mill residues are entered into OMP-FP, the system automatically includes the nutrients supplied by these materials and adjusts inorganic fertilizer recommendations accordingly. This helps maximize the use of available organic nutrient sources while reducing unnecessary fertilizer applications.

Preparing fertilizer recommendations is only one

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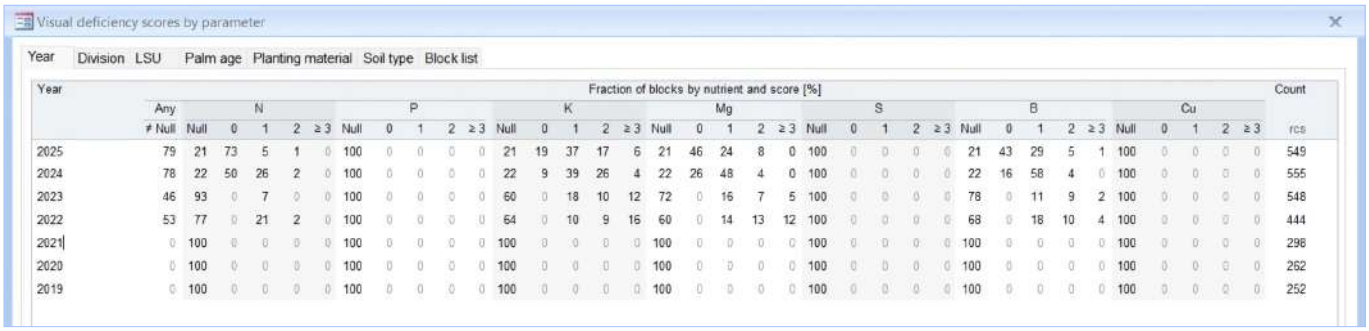

Figure 7. Visual Deficiency Scores by Parameter

part of effective nutrient management. Equally important is ensuring that the planned fertilizer programme is implemented correctly in the field and that any deviations are identified as early as possible.

OMP provides a range of reports and data analysis forms that compare recommended fertilizer applications with the quantities actually applied. These tools enable plantation managers to monitor fertilizer application progress, identify blocks where applications are incomplete or behind schedule, and take corrective action where necessary. Regular monitoring helps ensure that fertilizer is applied according to plan and that investments in fertilizer achieve the intended agronomic benefits.

Reviewing Long-Term Nutrient Trends

Nutrient management should be regarded as a

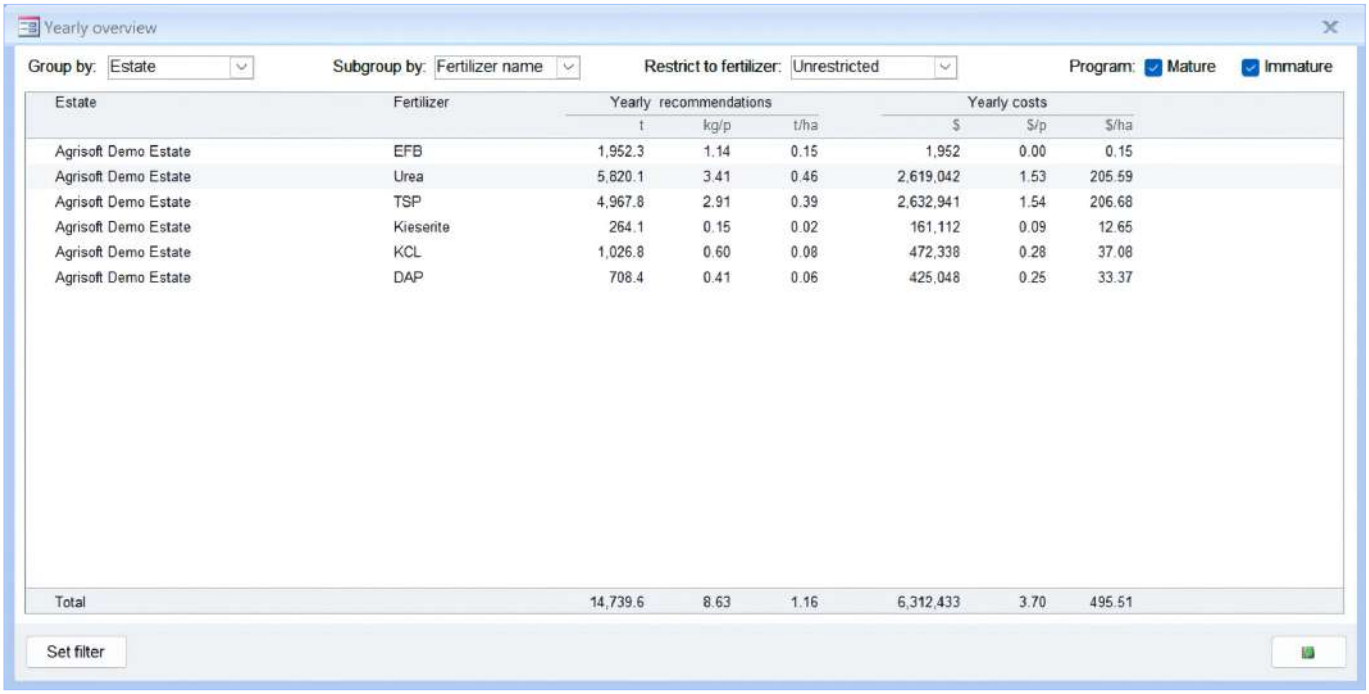

Figure 8. OMP FP - Fertilizer Yearly Overview

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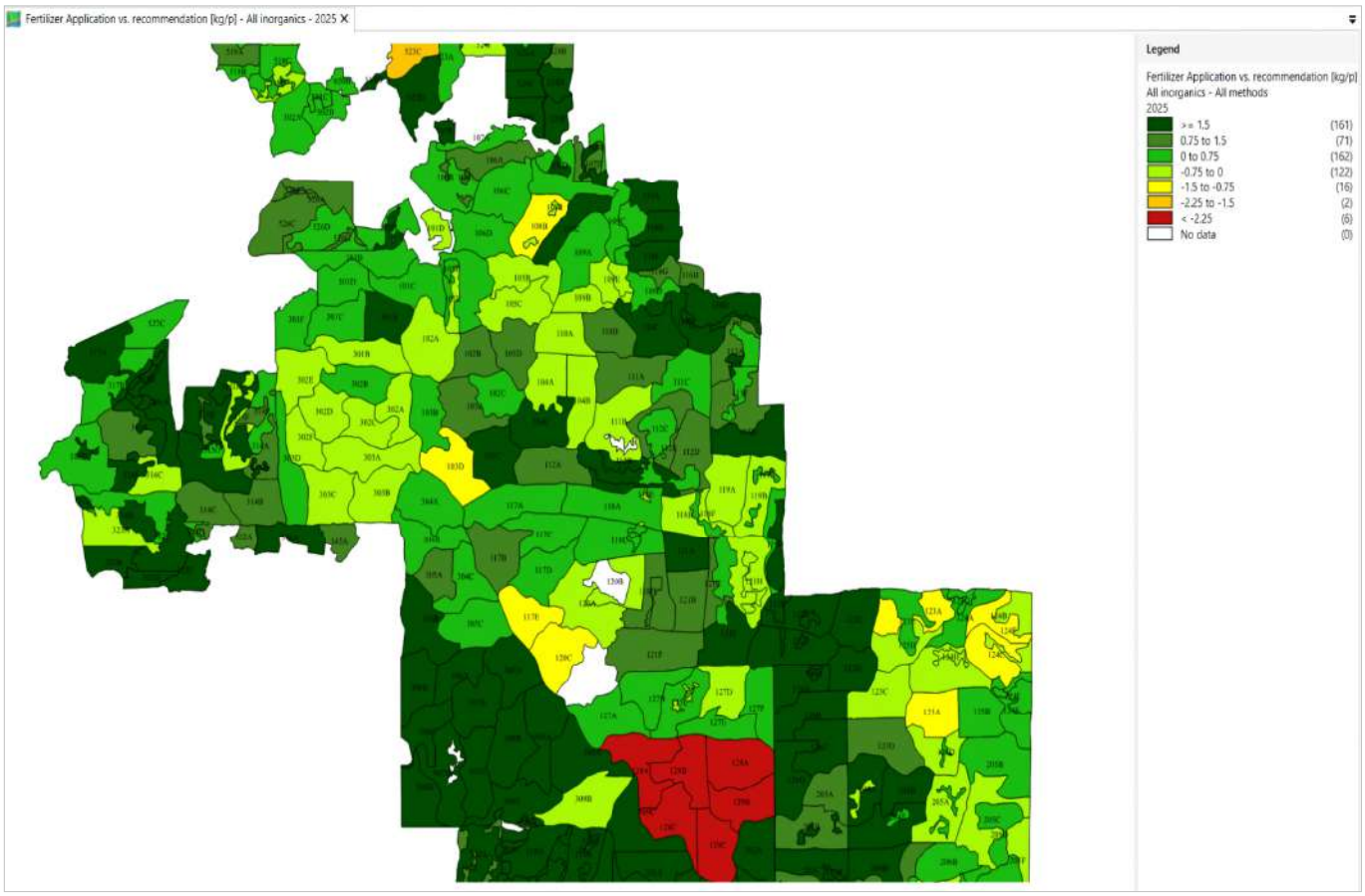

Figure 9. OMP GIS - Fertilizer Applications vs. Recommendations

continuous process rather than a once-a-year exercise. Once fertilizer application records have been entered, the OMP Nutrient Balance Report provides a comprehensive overview of both fertilizer implementation and crop nutrient status.

The report combines recommended and applied fertilizer quantities with five-year trends in leaf nutrient levels and soil nutrient status, allowing plantation managers to evaluate whether their nutrient management strategy is producing the desired results. Reviewing these data together helps identify emerging nutrient deficiencies, assess the effectiveness of previous fertilizer programmes and refine future fertilizer recommendations.

By integrating soil information, plant analysis, field observations, fertilizer planning, implementation monitoring and long-term nutrient evaluation within a single system, OMP provides plantation managers with comprehensive decision-support tool for effective nutrient management while helping maximize the return on fertilizer investments.

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OMP Report – Nutrient balance DEMO

No filter active.

Report Time range: 2020 – 2025 **Agrisoft Demo Estate**

Nutrient balance 2025

		Nutrient application and usage [kg/ha/yr]				
		N	P	K	Mg	Ca
Application	Inorganics	156.6	39.2	281.9	18.5	59.0
	Organics	4.7	0.6	14.2	1.1	1.1
	Sum	**161.3**	**39.8**	**296.0**	**19.5**	**60.1**
Usage	Immobilized	49.6	26.8	93.8	9.4	12.1
	Removed (FFB)	85.9	7.7	99.5	16.4	15.1
	Sum	**135.5**	**34.5**	**193.4**	**25.8**	**27.2**
Net removal	**Application - Usage**	**25.8**	**5.3**	**102.6**	**-6.3**	**32.9**

Nutrient balance calculation parameters

Time range:	2025			N	P	K	Mg	Ca
Area:	12,739.22	ha	Nutrient content FFB	kg/t	4.6	0.41	5.33	0.88	0.81
Area in yield:	12,692.40	ha	Immobilization rate	kg/p/yr	0.37	0.2	0.7	0.07	0.09

Yield components

Year	Yield		ABW	Bunches	
	t/ha	kg/p	kg	b/p	b/ha
2020	27.0	204.8	19	11	1,384
2021	27.3	207.1	20	10	1,340
2022	26.6	202.3	21	10	1,267
2023	22.9	172.1	21	8	1,104
2024	21.8	163.6	19	9	1,149
2025	18.7	139.3	17	8	1,086

Leaf analysis

Year	N [% DM]		P [% DM]		K [% DM]		Mg [% DM]	
	Leaf	Rachis	Leaf	Rachis	Leaf	Rachis	Leaf	Rachis
2020	2.69	0.59	0.164	0.097	1.06	1.50	0.28	0.076
2021	2.70	0.59	0.164	0.098	1.06	1.49	0.28	0.075
2022	2.69	0.60	0.165	0.098	1.06	1.50	0.29	0.076
2023	2.65	0.60	0.164	0.099	1.05	1.51	0.28	0.077
2024	2.67	0.60	0.170	0.097	1.09	1.50	0.29	0.076
2025	2.67	0.60	0.169	0.099	1.08	1.50	0.29	0.077

Soil deficiency scoring

Year	N	P	K	Mg
2020				
2021				
2022				
2023				
2024				
2025				

Soil analysis

Sampling zone: Circle Sampling depth: 20-40 cm

Year	Tot. N	Av. P	Exc. K	Exc. Mg	Org. C
	%	mg/kg	cmol/kg	cmol/kg	%
2021	0.11	203	0.47	2.34	0.94
2022	0.11	206	0.48	2.32	0.94
2023	0.11	206	0.48	2.32	0.94
2024	0.11	197	0.48	2.27	1.00

Figure 10. Nutrient Balance Report

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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.

OMP Mill

- New module focusing on oil yields, oil extraction rates and milling losses
- Standalone WPF application independent of Microsoft Access
- 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, overripe bunches) at mill ramp
- Correlation of different results with each other and where possible with other field/block parameters e.g. palm age, planting material, seasonality
- Development over time of bunch ripeness, potential and actual OER and mill losses

General Improvements

- Additional fields for BMP status and irrigation status
- Further grouping and display options on Monthly/YTD production reports
- Daily recording of fertilizer and pesticide application
- Execute passthrough queries in OMP QW
- Function to load queries from other OMP QW data file
- Improved data analysis for resource use rates
- New reports for leaf nutrients versus critical and optimal leaf nutrient levels
- Data analysis form for upcoming scheduled replanting areas
- Web service data transfer between OMP Field Survey app and add-in
- Cost estimate from field work resource budget

Production data recording

- Separate tables for harvesting data recorded in the field and for crop delivered to the mill
- Reconciliation of bunches harvested vs delivered
- Estimation of crop remaining uncollected in the field
- Recording of labour use related to harvesting and crop transport within general resource use module
- Integrate daily production and harvesting Excel import into main OMP Excel importing module
- Increased support for server-side recalculation and query computation