Release notes – Overseer version 6.5.11

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1. Introduction

The 6.5.11 release introduces improvements to purchased supplement data management and nutrient integrity across OverseerFM. As part of a broader initiative to streamline and standardise model inputs, this release begins the rationalisation of custom purchased supplement entries.

The release follows on from that included in the 6.5.9 release (9th March 2025) when several common "user defined supplements" were added to the supplements database. Over time, users have created a wide range of similar or overlapping supplement names and nutrient make up (e.g. users found 32 different ways of typing "soya bean hulls" into the software as a custom supplement, with over 20 different nutrient combinations associated with those added supplements). This leads to inconsistent data and challenges in analysis and reporting.

Release 6.5.11 initiates the consolidation of those entries and aligns user-defined supplements with OverseerFM's core set of standard supplement categories. Where a custom supplement matches a predefined entry, its nutrient content has been updated to reflect Overseer's default nutrient profiles (several of which were updated in release 6.5.10), improving consistency across farm records and supporting more reliable modelling outputs.

To further enhance data accuracy, this release also addresses instances where crude protein (CP) values were mistakenly entered as nitrogen content. An automatic correction has been applied using the standard nitrogen-to-protein conversion factor (CP ÷ 6.25), ensuring nitrogen values now accurately reflect true protein inputs.

This update reflects our ongoing commitment to improving system integrity and data quality across OverseerFM. The accompanying impact analysis outlines the changes introduced in 6.5.11 and highlights key considerations for supplement data validation and review.

2. Overall impact on modelled results

The impact of all model updates are systematically tested on all analyses of the database. By applying these changes to the entire database, the results provide a reliable assessment of their influence on nutrient loss estimates and greenhouse gas (GHG) emissions.

The following graphs illustrate the impact of release 6.5.11 on nitrogen (N), phosphorus (P), and greenhouse gas (GHG) results at the farm analysis level.

For this comparison, we utilized the complete OverseerFM database, encompassing just over 170,000 analyses, of which just over 150,000 included results. This dataset also includes predictive and scenario analyses, which may not always represent realistic farm systems.
13,151 analyses (7.6%) had results that were changed in some way by this release.

N loss variation

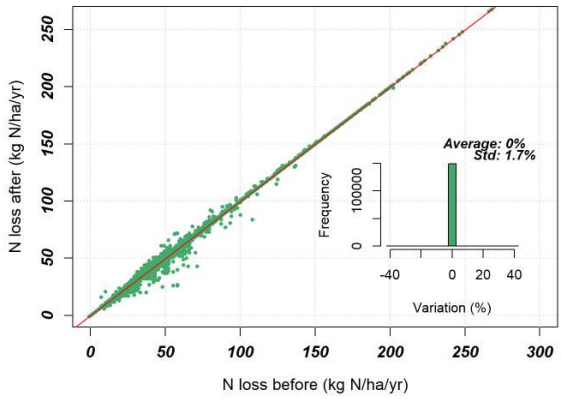
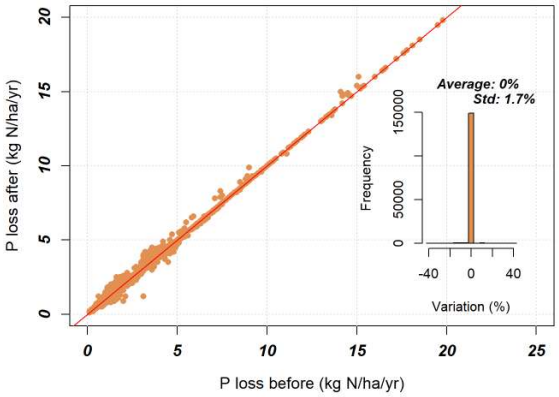
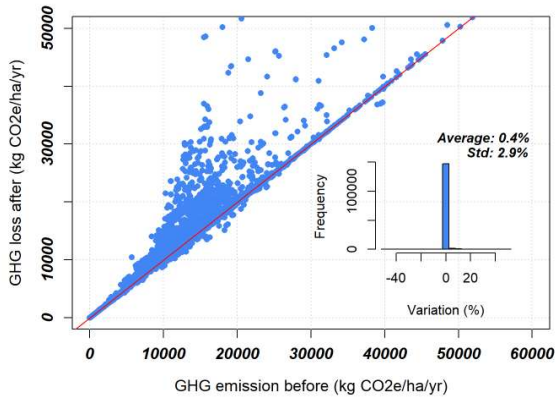


Figure 1: total N-loss variation

P loss variation



GHG emission variation



3. Understanding GHG emission increases due to supplement reclassification

In the 6.5.11 release, users may observe significant increases in reported greenhouse gas (GHG) emissions for some farms - sometimes more than double previous values. This change stems from improvements to

supplement classification during the rationalisation and data migration process.

Historically, custom feed supplements entered by users were often classified under a generic "Other" category. In such cases, OverseerFM applied a default intrinsic emission factor of 0.502 kg CO_2e per kg of dry matter (DM). However, with the 6.5.11 update, if a custom supplement name matches a known standard feed (e.g. Soya Bean Hulls), it is now automatically reclassified to the appropriate predefined category, with the associated emissions factor.

This reclassification ensures greater accuracy but may lead to higher reported emissions for certain supplements - particularly soy-based feeds. For example, "Soya Bean Hulls" will now be associated with the substantially higher emission factor of 5.417 kg CO_2e per kg DM due to their origin and associated life cycle emissions (details of the emissions factors used by OverseerFM can be found in the release notes for 6.3.3 (11 June 2020).

Example impact:

Classification	**Emission factor (kg CO_2e/kg DM)**	**Total emissions for 100,000 kg DM**
"Other"	0.502	50,200 kg CO_2e
"Soya"	5.417	541,700 kg CO_2e

The observed increase in GHG emissions is a result of OverseerFM's enhanced internal matching system, which reclassifies certain custom supplements to more accurate predefined categories. While this may lead to a marked rise in reported emissions, it reflects improved classification accuracy and better alignment with true supplement composition.

Default Emission Factors for Custom Supplements by Type

Type	**Emission factor (kg CO_2e/kg DM)**
Hay/Silage	0.201
Maize/cereal silage	1.564
Concentrates	1.800
Whole grain	0.347
Other	0.502

Emission Factors for Supplements Added in 6.5.9 Release (March 2025)

Category	**Supplement**	**Emission factor (kg CO_2e/kg DM)**
Greenfeeds	Fodder beet	0.264
Greenfeeds	Sugar beet	0.264
Greenfeeds	Swede	0.264
Process byproducts	Almond hulls	0.129
Process byproducts	Biscuit and bread mix	0.192
Process byproducts	Bread	0.192
Process byproducts	Calf meal	5.417
Process byproducts	Calf milk replacer	1.300
Process byproducts	Corn gluten feed	0.147
Process byproducts	Dairy pellets	0.502
Process byproducts	Golden dried distillers grain	0.450
Process byproducts	Oat hull pellets	0.423
Process byproducts	Soya bean hulls	5.417
Process byproducts	Sunflower meal	0.267
Process byproducts	Sweetcorn waste	0.199
Process byproducts	Tapioca pellets	0.181
Process byproducts	Whey	0.003
Silage	Barley silage	0.209
Silage	Pea silage	0.025