Subject: FW: Clarification on Nitrogen Balance and Methodology Language in RAC Draft
Date: Thursday, October 16, 2025 at 3:02:41 PM Pacific Daylight Time
From: STAPLETON Isaak * ODA <Isaak.STAPLETON@oda.oregon.gov>
To: SUMMERS Sunny * ODA <Sunny.SUMMERS@oda.oregon.gov>

Here is OSU's email.

Isaak Stapleton, Division Director
Oregon Department of Agriculture – Natural Resources
635 Capitol St NE, Salem, OR 97301-2532
CELL: 503.931.5608 | WEB: Oregon.gov/ODA
Pronouns: he/him

From: Bonilla, Carlos A <carlos.bonilla@oregonstate.edu>
Date: Monday, October 13, 2025 at 3:51 PM
To: STAPLETON Isaak * ODA <Isaak.STAPLETON@oda.oregon.gov>
Cc: Moore, Amber D <amber.moore@oregonstate.edu>, Sasidharan, Salini <salini.sasidharan@oregonstate.edu>, Lutcher, Larry <larry.lutcher@oregonstate.edu>, Qin, Ruijun <ruijun.qin@oregonstate.edu>
Subject: Clarification on Nitrogen Balance and Methodology Language in RAC Draft

Hi Isaak,
Thank you for sharing the most recent draft of the RAC materials and for the opportunity to provide input ahead of Thursday's meeting. After reviewing the section on nitrogen balance and nutrient budgeting, several points of clarification from the OSU team may help ensure the language accurately reflects our previous discussions and scientific intent.

First, the current text attributes to OSU the recommendation of the **A–R (applied minus removed)** approach for estimating post-harvest soil nitrate storage. In fact, our working group recommended the **A/R (applied divided by removed)** ratio approach, which is conceptually and mathematically different. The A–R method can easily be misinterpreted as a direct measure of soil nitrate accumulation, which was not our intent. Clarifying this distinction would better align the document with the group's prior discussions and the supporting literature.

Relatedly, the comment that "i*t is hoped that OSU will be able to develop a calculator and nitrogen coefficients for crops in the LUBGWMA*" may unintentionally imply a formal commitment from OSU. While we are glad to support the technical process as capacity allows, OSU has not committed to developing such a tool at this stage.

We also noticed several areas where the language could benefit from refinement or clarification:

- Nitrogen Form: The text continues to reference total N rather than plant-available N, particularly in the nutrient budgeting section. Using plant-available N would be more consistent with agronomic practice and the scientific intent of the balance approach.
- Agronomic Rate: The current draft implies a single “agronomic rate,” though rates are typically expressed as recommended ranges that vary with site, yield goals, and conditions. They are designed for optimizing yield, not directly for minimizing leaching.
- Soil Testing for Nitrate: The continued emphasis on routine soil nitrate testing is concerning. Unlike phosphorus, nitrate levels fluctuate rapidly and are not reliable indicators of nitrogen loading risk outside of CAFO or controlled settings. OSU’s earlier feedback recommended focusing instead on nitrogen additions and removals.
- Organic Amendments: The omission of manure, compost, and reused water nutrients may lead to incomplete accounting of N sources. Clarification on whether these are addressed under separate rulemaking would be helpful.

We share ODA’s goal of developing a workable, science-based framework that helps producers manage nutrients effectively while protecting water quality. These refinements are offered in that spirit, to help ensure the rule language aligns with sound agronomic principles and the shared intent of the RAC.
Please don’t hesitate to reach out if you’d like additional clarification or examples before the meeting.
Best regards
Carlos

Carlos Bonilla, PhD
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Thursday, October 16, 2025 at 11:05:10 Pacific Daylight Time

Subject: CCA references in the LUBGWMA rule language
Date: Thursday, October 16, 2025 at 9:03:13 AM Pacific Daylight Time
From: Dani Lightle <dani@ofsonline.org>
To: STAPLETON Isaak * ODA <isaak.stapleton@oda.oregon.gov>, MOULUN Renee * ODA <renee.moulun@oda.oregon.gov>
CC: SUMMERS Sunny * ODA <sunny.summers@oda.oregon.gov>
Attachments: image001.jpg

Hi Isaak and Renee,

Since the draft rules make references to Certified Crop Advisers, I reached out to the national organization and they provided the following information/feedback to incorporate into the rules:

- The draft has multiple instances of “certified crop advisor”. The correct spelling and capitalization is Certified Crop Adviser.
- To correctly identify the certifying organization for different designations, change the language in 603-XX-XX13 (1)(a)(i) to: Specialists may include Certified Professional Soil Scientists by the Soil Science Society of America, Certified Crop Advisers by the American Society of Agronomy, or Technical Service Providers certified in nutrient management by the Natural Resource Conservation Service (NRCS).

Best regards,

Dani Lightle
Policy and Stewardship Director
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Oregonians for Food & Shelter

A non-profit coalition to promote the efficient production of quality food and fiber while protecting human health, personal property and the environment, through the integrated, responsible use of pest management products, soil nutrients and biotechnology.

Subject: Comments 10/16
Date: Thursday, October 16, 2025 at 12:36:56 PM Pacific Daylight Time
From: Spencer, Brad <Brad.Spencer@simplot.com>
To: RULEMAKING Oda * ODA <rulemaking@oda.oregon.gov>
Attachments: image001.png, image002.png, image003.png

Good afternoon, reading over the latest draft, I had one instance that stood out to me. When Defining total Nitrogen I wanted to point out that TKN from most labs is commonly expressed as a percentage of total volume in the soil sample unless otherwise specified. What I also saw is in the article em 9243, TKN is not on there as a required analysis. Is TKN going to be required for all sampling, according to the definition of total N it would seem so, but it is not mentioned in the soil sampling protocol.
Thank You

(23) "Pasture" means land that sustains vegetative growth in the normal growing season that is primarily used to grow forage for grazing livestock where the livestock are not confined in pens or lots or on a prepared surface and where waste is not managed using a waste water control facility.
(24) "Plant Available Nitrogen" means a form of nitrogen in the soil that plants can readily absorb and utilize for growth, with the chemical formula NO3 (NO_3-N) and NH4 (NH4-N).
(25) "Pollution" or "water pollution" has the meaning given in ORS 468B.005.
(26) "Saturated soil" means soil with all available pore space filled that it is at or exceeding 100% of field capacity.
(27) "Synthetic Nitrogen" means a fertilizer, agricultural mineral, or other material containing ammoniacal nitrogen, nitrate nitrogen, urea nitrogen, other water soluble nitrogen, and / or water insoluble nitrogen manufactured through human controlled chemical reactions. Synthetic nitrogen includes both dry and liquid formulations.
(28) "Total Nitrogen (TN) is the sum of all nitrogen-containing compounds in a sample including both inorganic and organic forms. TN = Total Kjeldahl Nitrogen (TKN) + Nitrate (NO_3-N) + Nitrite (NO_2).
(29) "Waste" or "wastes" has that meaning given in ORS 468B.005 with the clarification that "waste" or "wastes" includes but is not limited to fertilizer, pesticides, fumigants or nitrate (NO_3-N) that enters groundwater as a result of agricultural activities.
(30) "Water" or the "waters of the state" has the meaning given in ORS 468B.005.

603-XX-XX04
Prohibited Acts
[This rule applies to all landowners in the LUBGWMA]

(1) Fertilizer may not be applied to agricultural lands in a manner that causes pollution of the groundwater of the state or in a manner that places wastes in a location where such wastes are likely to escape or be carried into the groundwater of this state.
(2) The placing of fertilizers, fumigants, or pesticides into groundwater via back flow through a water supply well is prohibited.
(3) The placing of fertilizers, fumigants, or pesticides down a groundwater well casing is prohibited.

Soil parameters	Methods	Target regions or soil conditions	Method re
Soil pH	1 part soil: 2 parts water (1:2)	All	Miller et al
Buffer pH for lime requirement	Sikora method	Acidic soils, primarily Western Oregon	Crouse et a
Buffer pH for lime requirement	SMP method	Acidic soils, primarily Western Oregon	Miller et al
Extractable phosphorus (P)	Olsen extraction (also known as sodium bicarbonate)	Alkaline soils, primarily Eastern Oregon	Miller et al
Extractable phosphorus (P)	Bray P1 Extraction (1:7) (Also known as Weak Bray or Bray Kurtz P1)	Acidic soils, primarily Western Oregon	Miller et al
Extractable potassium, magnesium, sodium, and calcium (K, Mg, Na and Ca)	Ammonium acetate extraction	All	pH 7.0: Mil 5.10) pH 8.5: Mil 5.11)
Nitrate-Nitrogen (NO_3-N)	Potassium chloride extraction	Low-rainfall climates, primarily Eastern Oregon	Miller et al
Ammonium-Nitrogen (NH_4-N)	Potassium chloride extraction	Low-rainfall climates, primarily Eastern Oregon	Miller et al
Sulfate-Sulfur (SO_4-S)	Calcium phosphate extraction	Low-rainfall climates, primarily Eastern Oregon	Geldermar Sulfate-Sul
Zinc, manganese, copper and iron (Zn, Mn, Cu and Fe)	DTPA extraction	All	Miller et al
Boron (B)	Hot water	All	Miller et al
Soil organic matter (SOM)*	Combustion (derived from total C)	Soils low in carbonates (non-calcareous soils)	Miller et al
Soil organic matter (SOM)*	Walkley-Black	All	Crouse et a
Soil organic matter (SOM)*	Loss on ignition (LOI)	All	Miller et al

Brad Spencer | Digital Sales Supervisor | Digital Sales Enablement

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