

Please consider the following comments regarding the issues dealing with future water quality and the expert panel.



Vulnerability/risk assessment

- Crop type is problematic, and this exists in both methods to assess (the RWQCB calculation and the UC Riverside calculation)
 - o Is a 2=carrot really twice less of a threat than a 4=broccoli? The ratios that Riverside used to calculate were meant as a generalization, but when used for equations to determine threat this triggers a host of additional regulatory burdens. The panel should seriously consider the simplistic 1-4 threat value numbers, and request a realistic re-numbering that reflects actual difference in threat (such as 0.75-1.5 etc.) If it is unknown, it should be removed.
 - o Most crops in region are high threat, so this is usually N/A anyways
 - o Does not seem applicable in lieu of using N balance ratios and working on N plans. If we are promoting growers to apply 100% of what the plant needs, why does it matter what crop we grow?
 - o Recent work on scavengers such as broccoli, cabbage yet these crops are still listed as 4s - this questions the validity of numbering system

Irrigation water nitrogen reporting / CCA-related questions

- o How does reporting N in irrigation water also account for irrigation uniformity? E.g. 80% uniformity means that you should reduce it to 80% of total nitrate ppm nitrate in water as only 80% of field will receive the average amount of water (?) Find industry average values for uniformity and apply (?)
- o How do instructions account for leaching fraction? The dissolved salts in water reduce the plant's ability to uptake water, therefore you need to apply more water than the plant "needs" and the plant will be impaired in uptaking nutrients.
- o Nutrient budget form -- Should specify taking a weighted average of irrigation water to calculate total N applied.

- Reporting
 - o Water use data and nitrogen should be reported at ranch or well level, not crop level. Farmers only have water meters on wells, not on every field (=every crop)
 - o Perhaps making each farm start with their top 5 crops (in acreage) and reporting those, OR reporting at the Ranch level would be easier than all at once.
- Cover crops and compost
 - o Double counting - If compost and cover crops are incorporated, doesn't that show up in the soil test taken later (and therefore is double-counting it)?
 - o Release rates are extremely variable - last years, but how confident are we of those percentages, water content and temperature drive process.
- N ratios -consider that actual nitrogen use efficiency of crops (themselves) is lower than 100%, how can growers then apply only 100% of N required?
- Split applications vs. 1 application fertilizer

Overall there is too much variability in performance and farming practices for there to be a one size fits all regulation. Focus should be on third party cooperatives/auditors working directly with farmers to review and suggest improvements for performance. Current staff at RWQCB do not have the agronomic expertise nor budget to conduct, and there are probably not enough CCAs to do so either (yet).

Another comment to consider: If we (farmers) are willing to admit that the contribution to ground water problems were mostly through the fault of over application, is the State willing to allow us to fix the problem utilizing newer and better scientific data and methods that weren't available when our fathers farmed? I honestly believe that this generation is more aware of the created problems and is more willing to take a more active role in dealing with this serious but remediable situation. We have tools now that weren't available several years ago that can help us solve this problem. Education in using these valuable tools is probably the most important component to a successful program.

Thank you for considering these comments.

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