

Attn: Western Growers, California & Arizona Leafy Greens Marketing Agreements

From: Duncan Family Farms

Subject: Amendment of Water Treatment Metrics

To whom it concerns,

I am submitting public comment to request a change of the current treatment & sampling metrics to remove the rigidity of compliance and instead focus water sampling as a tool to developing risk assessments and allow for flexibility in the treatment process. The current standard is modeled for a strict chemical treatment and doesn't allow for other validated treatment options such as UV. The current requirements also put undue pressure on a grower to manage their entire water system (ie conveyance) like a public system but doesn't account for the variability in an ag water system vs constant pressurized public delivery systems. The current sampling approaches also lead the grower to take unnecessary remediation steps in the event of elevated results caused by anomalous variability in the conveyance and not the source (source contamination is documented in both Wellton canal and Adam Bros reservoir). Ag irrigation is dictated by the agronomic needs of the crop and not the management reaching stabilization. The current sampling model doesn't provide the grower tools to assess overall risk but rather create time periods of operational compliance to meet the water result. The one size fits all treatment approach diminishes the grower's opportunity to take a thorough risk based approach to assessing source and conveyance on the ranch. Several core production factors dictate that a treatment practice may never be reached as intended originally by the recent LGMA changes. Some of these production factors include:

1. Pep water: Often less than 21 days to harvest period is irrigation turned on for a brief moment where a stabilized system will never be achieved hence hindering treatment, or rendering ineffective
2. Fertigation: Non-Synthetic crop treatments, such as fish emulsions, are organic rich products that would render products like chlorine or peroxyacetic acid moot
3. Biological Controls: Many biological products indicate waters be free of any chlorine, and or sanitizers. These products are key in organic production to control powdery & downey mildews, damping off pathogens and other various crop diseases. Crop quality is impacted as the needed products can't be used to their full effect.
4. System conveyance: Irrigation systems are many times transient, or subject to various irrigation activities (such as the aforementioned) and are variable in their flow depending on production needs. Production activities include:
 - a. Set switches: impair system stabilization
 - b. Flow: LGMA requires flow documented however flow at a booster is not indicative of flow on a mainline where different irrigation sets, and acreage size, impact flow resulting in multiple flow rates

and not being able to be measured. Flow, as published in length for CT calculation with 12.5% sodium hypochlorite, determine a single end user where the baffling factor is not impacted.

c. Flow requirement: Flow is a factor in CT calculations for Sodium hypochlorite only, flow has no bearing on CT for peroxyacetic acid yet is required for documentation.

d. Start up to shut down: Depending on agronomic needs stabilization many never be achieved.

5. Record Keeping: End of system residual isn't always feasible nor is the necessary outcome if treatment at the beginning of the system controlled the microbial outcome through log reduction to an acceptable level. Paper test strips (or titration) are limited to an individual at the moment of assessment. Probes, as suggested in the LGMA, work at source injection which allow for real-time logging.

6. The Type B bucket is too large and unfairly categorizes these systems as equal in risk. Examples include a well delivering in a concrete lateral vs surface originated waters delivering into an unlined reservoir. There are stark microbial differences between the two in this one example.

7. The 21-day requirement is not necessary for all Type B waters. The metric should incentivize the grower to pull more samples and build a water quality profile and set treatment days to harvest, this is supported by FSMA's die off language. As mentioned in point 6 all Type B waters are unfairly categorized in a single "bucket"

8. Require an industry standardized pre-harvest tissue test

I'm asking that both California and Arizona Leafy Greens Marketing Agreements put on hold Type B to Type A treatment metrics and microbial assessment for further refinement. I ask for further simplification of the metric to the following:

- Eliminate end of system sampling and allow for a grower to sample wherever feasible to assess total risk of source & conveyance
- Eliminate triplet sampling criteria as the actionable result
- Eliminate total coliform panel as an actionable trigger due to their environmental ubiquity
- Eliminate flow requirement and change to suggested tool for treatment modeling
- Eliminate chemical residual requirement for end of system
- Refinement of Generic. E coli target criteria that encourages microbial reduction in a tiered level closer to harvest
- Create expanded tiers for Type B waters that allow for in depth risk assessments which would result in certain Type B waters into Type A categories absent of treatment
- Allow treatment record collection at point of dosing
- Require a standard pre-harvest tissue sample of n=60/acre minimum with no compositing of acres. A weight minimum of 200g assessed.

- Encourage routine water sampling where data drives risk modeling and development of a water quality profile (geometric mean) of source and conveyance