8. Water Quality Protection: Develop improved monitoring and application technologies and optimal management practices to avoid and/or leaching of nitrogen fertilizer into surface and ground water (4.1.3)

Room 8: Session 1

1. What are the top 3-5 grape related accomplishments of ARS during the past 3 years? What priorities of industry have been met?

no research on grapes
effects of chemistry on infiltration
Infiltration-rain irrigation interactions,
mapping salinity for management,
salinity issues with food processing

2. What major gaps still exist between ARS' research focus and the needs of industry?

Significant gaps exist between industry and current ARS needs.
1)Ethanol emissions from wastewater,
2) by product utilization (value added), pomace(seeds, stems, lees filter. aids, tartrate,
3)Process wastewater in (internal operation a)reformulation of cleaning compounds, water conservation, alternative choices for cleaning compounds ii external a)new strategies or validation of existing strategies for BOD, nitrogen treatment etc 2)assessment tools (effectivity) 3)matrix development for crop selection based on waste material and soil type.
4)more sustainable practices, growing, processing, packaging, delivery6) carbon footprint modeling

3. What are the future research projects could address these gaps?

1)Analysis of impact of ethanol on air quality/white paper.
2) By product pomace biofuels, neuticeutical, oils
3)less biofuels
4)filter aids soil conditioners, alternative disposal options
5) tartrates cost effective recovery Process waste water
Internal identifying and developing .... Water conservation assessment of conservation opportunities reuse and recycle, alternative cleaning technology New technology for cleaning evaluate range of options and look at other industries External develop regional specific guidelines to address BOD nitrate, etc. Assessment tools reference solution above Matrix/model is the action More sustainable practices ...evaluate long term impact of management practices for energy, manufacturing, land application, ion exchange alternatives for pH adjustment, carbon footprint modeling-evaluate impact systems analysis, packaging, carbon sequestration relative to vineyards, total carbon mass balance (at the vine level), biogenic effect from fermentation CO2 emissions

4. Which teams of scientists (ARS, university, and industry), that currently exist or that could be created, are in the best position to address the research gaps?

Ethanol
Pomice biofuels University
Neutriceuticals industry, university ARS (human nutrition centers)
filter aids for soil conditioners, greenhouse pots -industry (nursery) tartrate recovery (industry)
process water (ARS, University, product manufactures, water conservation (ARS Fresno State, industry) New technology choices for cleaning product(ARS, University), cleaning of tanks (University)
New strategies for BOD treatment (industry, ARS University)
Matrix (ARS industry partnership)

5. How can the progress and impact of ARS research on grapes be increased with existing resources?

No existing resources

6. How will research results be extended to end users through an outreach plan? What is that outreach plan?

Through a partnership among ARS industry and cooperative extension-talks at grower meetings, extension type bulletins, tech transfer workshops. SBIR and CRADA agreements for internal and waste product utilization. Develop self assessment tool. Put improvements under EQUIP