

Agricultural Working Group 2nd Meeting
August 12, 2011
Final Meeting Notes

HST Section: Fresno to Bakersfield

Meeting Date: August 12, 2011

Location: [REDACTED] Fresno, CA 93720

Purpose: To discuss Wind, Dust, Bees

Participants: John Karlik, UCCE, Kern County

Shannon Mueller, UCCE, Fresno County

Doug Flora, Exact Harvesting Systems

John Diener, Landowner/Farmer, Chairman of Group

Jeff Abercrombie, CHSRA Central Valley Area Program Manager

Cheryl Lehn, URS, Outreach Team

Prepared by: Cheryl Lehn

Decisions:

1. Meet on August 25, 2011 at 9:00 a.m.
2. Meet on September 7, 2011 at 9:00 a.m.
3. Meet on September 15, 2011 at 9:00 a.m.

Action Items:

1. To prepare a one page fact sheet for each issue
2. To review each fact sheet
3. To cite references

Discussion of Issues:

John Diener, Chairman

1. Overview of Ag Working Group
2. Explained that in some areas, can't stay on an existing corridor, due to 220 mph
3. City of Hanford asked the Authority not to go through their downtown, therefore went around town

Agricultural Working Group 2nd Meeting August 12, 2011 Final Meeting Notes

Jeff Abercrombie

The CHSRA solicited questions from other countries. Jeff distributed several handouts which were their responses:

Note: these attachments were sent prior by email to the group

1. Questions and Approaches – Japan's answers to the CHSRA
2. Report on the effects of the HSR on Agriculture in Spain
3. Interface of Spain HSR to Agriculture
4. Letter from Consulate General of Belgium
5. Potential impact from induced winds for HST by CH2MHill
6. Memorandum regarding wind generated fugitive dust emissions from a passing HST

Jeff asked the group to look at the information objectively. He once again reiterated that the CHSRA is not looking for supporters, but those that have to can point to research or experience that can answer the questions being asked of the Authority by agriculture.

Senator Canella has asked for a list of the Ag Working Group. Jeff has given the Senator a list of the group that he has invited to participate.

Introductions:

Doug Flora

1. 3rd generation almond grower and harvester
2. Manufactures equipment to address air quality issues
3. Serves on Environmental Committee of the Air Quality Board
4. Those farming in California have been and need to continue to be innovative in their farming practices.
5. Why go through virgin ag lands
6. Doug quoted some PM2.5 and PM10 studies, where he thinks the HST will generate less particulate matter than ag

John Karlik

1. Stated that the European legal system different from U.S., different EIR/S process
2. Good qualitative answers to questions from other countries, however not deep research base
3. Asked to get copies of articles referenced in handouts
4. Referred to one memo where co-efficient for wind would seem to produce a high estimate of PM/dust. (Page 7 PMT Memo)

Agricultural Working Group 2nd Meeting August 12, 2011 Final Meeting Notes

Issue: Mites due to Dust

Jeff referred to the PMT Memo on wind to start the discussion and asked the group in a case of mites, due to dust. Would the volume of dust be a factor to grapes, etc.? Would it be a problem for pests?

The following comments were made:

1. The result would be negligible once you get 3 meters away from the train. Any time you have a dusty road, you will have a mite problem—it's just a fact.

Others agreed that the result would be very small.

2. The maintenance people running up and down the track may create some dust. Traffic in the right of way is a concern.
3. Dust and particulate matter is not equivalent. PM10 and PM2.5 are not equivalent to the larger particles that are considered dust.
4. With 100 feet of right of way width, and an additional 30 feet or more to the fence on each side, there is quite a distance from a grower's land.
5. The group thought it would be up to the grower where he begins his farming away from the right of way fence.

Issue: Blossoms/Pollination

Jeff asked if the HST "wind" would be affecting blossoms from the trees.

1. The group asked about the frequency of trains.

Jeff replied five to six minute intervals/10 to 12 trains per hour in each direction, closed for maintenance from midnight to 5:00 a.m. Trains will be 1300 feet long @ 220 mph; will pass you in 4 to 5 seconds. The technical memo from CH2MHill cites the velocity that may be generated at 12 to 15 feet wind gust @ 10 to 20 mph. He asked if anyone had a study for blossoms falling off.

2. The group discussed bees not flying in windy weather. (15 mph or greater) There is a study that can be referred to that will be distributed next month by Shannon Mueller.

Agricultural Working Group 2nd Meeting August 12, 2011 Final Meeting Notes

3. Another comment was that “wind assists in pollination in some situations.”
4. There is another study done by Sprayology (Ken Giles, U C Davis Ag Engineer). It discusses how to put spray material on trees, volume of air, etc.
5. The group discussed the constant breeze vs. the train being “a pulse.” Bees will hunker down, and then come back in the event of a pulse vs. the constant breeze, in which case they would stay in the hive.
6. Hive placement is critical. The placement is in accordance with where it will warm up the soonest.
7. Due to rain or dew the atmospheric conditions have a cleansing effect on the plant.
8. Other bees besides honey bees also pollinate. Most native bees are ground nesting bees, such as the alkali bee. Leafcutter bees are also commonly used for seed alfalfa pollination on the Westside along with honey bees. Some growers are looking at the Blue Orchard Bee (*Osmia*) for pollination of almonds. Leafcutter bees and Blue Orchard Bees are not put out in traditional hives; they are placed in nest blocks or shelters. There are other crops that need cross-pollination, such as melons and alfalfa seed that rely on insect pollinators (primarily honey bees). (Although more of these crops are grown on the Westside.) There are some self-pollinated or wind-pollinated crops such as walnuts, tomatoes, corn, etc. that don’t need pollinators.
9. A distinction between insect pollinated plants vs. self-pollination plants should be noted.

Pesticides, Spraying

The group moved to discuss the “wind” in relation to pesticide application.

1. The questions regarding extra spraying can be examined through county records that exist today for orchards, vineyards that are adjacent to the current right of way. (each County Agricultural Commissioner’s Office has the records)

Agricultural Working Group 2nd Meeting August 12, 2011 Final Meeting Notes

2. The group pointed to the Spain and Belgium papers that treat their high speed train like any other right of way.
3. The ridership of the HST is akin to an airline where confined air spaces are filtered and sanitized appropriately for diverse populations.
4. In regard to general spraying and field work looking at a north to south orientation is preferable for the least amount of interference between right of way and cultural practices. There will be fewer rows intersected. There would be no exposure to riders. He knows that when a farmer is spraying, he wouldn't want to spray or drift to a neighbor.
5. Dusting with sulfur (up to October) is the biggest problem. Sulfur is a heavy particulate not a gas. It is used in tomatoes and grapes as a fungicide for mildew.

Jeff asked if the group if they knew of a purported case where freight trains transferred pesticides.

1. Not to the knowledge of the participants.
2. If there was a significant gust of wind, then this would be a problem, but it doesn't sound like that could happen with HST.
3. The group agreed that we need measurements. Someone referred to **Chapter 18** in a book entitled "**Agrochemical Environmental Fate State of the Art.**" Wind speed is straight forward, can set up data loggers. This chapter answers many of the questions being asked.
4. There is a law that if there are winds over 10 mph, YOU CANNOT SPRAY. You really shouldn't spray if winds are over 7 mph. Diener referred to the information that Ken Giles will have. John offered to secure this information for the group.

Jeff asked about where the train will intercept rows and if it matters about aerial or ground spraying.

1. The group wouldn't make a distinction between aerial and ground spraying in terms of efficiency loss. There would be more stop and start times. You can control drift, but you could lose efficiency with shorter rows and that costs money.

Agricultural Working Group 2nd Meeting August 12, 2011 Final Meeting Notes

2. Some growers have had to go to helicopters rather than planes in their operation. They are twice the cost; however they get down to the crop. Most growers feel it's best if you can ground spray. Some farmers do their own ground spraying, some hire aerial, some do a combination.
3. The group wants to obtain the references to the studies referred to in the handout materials regarding wind.

Jeff said short of talking to the County Ag Commissioners and aerial applicators for more information are there any other recommendations?

1. The group wished to get the wind part down first.
2. The relationship between particulate matter vs. dust should be understood. PM is not dust, PM is invisible. A paper authored by Bill Hinds of Los Angeles that has a good background on aerosols was referenced as a resource. His book, "**Atmospheric Pollution**" would be helpful.
3. The group also discussed drift as to "when does it become an issue?" We need to obtain the law (reference to cite) from the County Ag Commissioners regarding the 10 mph rule.
4. It was suggested we get information from Dr. **Brock Falkner, Texas A & M**, expert, well published, dust vs. particulate matter.
5. The visibility and concentration of dust particles and PM10 is not really related, only distantly related. Visual heavy dust is usually made up of large particles that their potential for drift is minimal. PM2.5 is very little. PM10 is in orchards and in general Ag operations. It is a by-product of ag operations.