

Project ID

1

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2012

Project Status

In Progress

ProjectType

NAEMS: Dairy Emissions

Project Name

National Air Emissions Monitoring Study (NAEMS): Air Emissions from California Dairies, Part I

Project Description

Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	Ag Air Research Council (AARC)	\$250,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Status update as of May 2008

Related info 2

Project ID

2

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2012

Project Status

In Progress

ProjectType

Dairy Emissions

Project Name

National Air Emissions Monitoring Study (NAEMS): Air Emissions from California Dairies, Part II

Project Description

Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer

Report Location

Not Available

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	ARB	\$40,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Y. Zhao	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Status update as of May 2008

Related info 2

Project ID

3

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2012

Project Status

In Progress

ProjectType

NAEMS: Dairy Emissions

Project Name

National Air Emissions Monitoring Study (NAEMS): Air Emissions from California Dairies from California Dairies, Part III

Project Description

Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	CDFA	\$70,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Y. Zhao	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Status update as of May 2008

Related info 2

Project ID

4

7/18/2011

Project Category

Livestock

Estimated Completion Date

June 2012

Project Status

In Progress

ProjectType

NAEMS: Dairy Emissions

Project Name

National Air Emissions Monitoring Study (NAEMS): Air Emissions from California Dairies, Part IV

Project Description

Accurately assess emissions from livestock operations and compile a database for estimation of emission rates, promote a national consensus for emissions-estimation methods/procedures from livestock operations. Includes monitoring of VOCs and GHG emissions at a commercial dairy using open-path Fourier transform infrared (OP-FTIR) analyzer

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	UC Davis, College of Ag and Env'a Sciences	\$40,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Y. Zhao	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Status update as of May 2008

Related info 2

Project ID  
5

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
May 2010

Project Status  
Completed

ProjectType  
Dairy Emissions

Project Name  
Process-Based Farm Emission Model to Estimate Air Emissions from California Dairies, contract 05-344

Project Description  
Using biological principles and engineering studies, develop a feed/waste stream process-based dairy farm emission model for VOC emissions.

Report Location  
<http://www.arb.ca.gov/research/apr/past/05-344.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Zhang	UC Davis	ARB	\$299,191
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner	UC Davis	UC Davis	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
A. Goldstein	UC Berkeley	UC Berkeley	
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
		USDA-ARS	
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
Project description at <http://www.arb.ca.gov/ag/caf/RuihongZhangDairySymposiumOct06.pdf>

Related info 2

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Project ID

6

7/18/2011

Project Category

Livestock

Estimated Completion Date

January 2007

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Dairy Air Quality Monitoring of ROG and Ammonia in the Central Valley of California

Project Description

Maintain staffing and supplies for field and laboratory work to continue the ARB funded ROG project ID 55.

Report Location

preliminary data available at: <ftp://ftp.arb.ca.gov/carbis/ag/agadvisory/krauter05jan26.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	CSU Agricultural Research Initiativ	\$208,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Goorahoo	CSU Fresno	ARB	\$104,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
B. Goodrich	CSU Fresno	SJVAPCD	\$104,000
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
M. Beene	CSU Fresno		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.epa.gov/ttn/chief/conference/ei15/session6/beene.pdf>

Related info 2

[http://www.epa.gov/ttn/chief/conference/ei14/session1/goorahoo\\_pres.pdf](http://www.epa.gov/ttn/chief/conference/ei14/session1/goorahoo_pres.pdf)

Project ID

7

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2008

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Evaluating Dairy Ammonia, Methane, and Hydrogen Sulfide Emissions Using Tunable Diode Lasers

Project Description

Develop real-time methods for evaluating process and time specific emission profiles for NH3, CH4, and H2S at dairies. A program to monitor ammonia emissions using the USEPA Emission Isolation Flux Chamber began in 2006 and continued through 2008. [No updates since 2006.]

Report Location

<http://www.epa.gov/ttn/chief/conference/ei15/session6/beene.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
D. Goorahoo	CSU Fresno	CSU Agricultural Research Initiativ	\$98,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
C. Krauter	CSU Fresno	ARB	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
B. Goodrich	CSU Fresno	Boreal Lasers	
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

Abstract on page 9 at this site: <http://www.epa.gov/ttn/chief/conference/ei14/final2005.pdf>

Project ID  
8

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
May 2009

Project Status  
Completed

ProjectType  
Dairy Emissions Mitigation

Project Name  
Dairy Operations: An Evaluation and Comparison of Baseline and Potential Mitigation Practices for Emissions Reductions In the San Joaquin Valley (Contract No. 04-343)

Project Description  
Project is designed to obtain data needed to better estimate baseline dairy emissions and to estimate the emission reductions achievable with available control technologies.

Report Location  
Report - <http://www.arb.ca.gov/research/apr/past/04-343.pdf>; Abstract - <http://www.arb.ca.gov/research/abstracts/04-343.htm>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	ARB	\$250,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Goorahoo	CSU Fresno	possible matching funds - CSUS Fresno Agricultural Research Initia	\$250,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
B. Goodrich	CSU Fresno		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
M. Beene	CSU Fresno		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
<http://www.epa.gov/ttn/chief/conference/ei15/session6/beene.pdf>

Related info 2  
Continuation of previous work

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Project ID

9

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2006

Project Status

Completed

ProjectType

Dairy Emissions Mitigation

Project Name

Air Emission Mitigation Techniques and Technologies for California Dairies

Project Description

Evaluate dairy PM10, 2.5, VOC, and ammonia emission mitigation practices for potential effectiveness. Includes lagoon and corral areas.

Report Location

<http://www.arb.ca.gov/ag/caf/FrankMitloehnerDairySymposiumOct06.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	Merced County via SWRCB and U matching	\$600,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
R. Zhang	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
P. Robinson	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
J. Fadel	UC Davis		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Project objective described in PowerPoint at:  
<ftp://ftp.arb.ca.gov/carbis/ag/agadvisory/mitloehner05jan26.pdf>

Related info 2

SJVAPCD Aug. 2005 VOC Emission Factors for Dairies,  
<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Project ID  
10

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
June 2005

Project Status  
Completed

ProjectType  
Dairy VOC Emissions

Project Name

Volatile Organic Compound (VOC) Emissions from Cows Fed Typical California Rations

Project Description

Measurements of alcohols, volatile fatty acids, phenols, and methane (CH<sub>4</sub>) emitted from nonlactating (dry) and lactating dairy cows and their manure under controlled conditions. The experiment was conducted in an environmental chamber that simulates commercial concrete-floored freestall cow housing conditions. The fluxes of methanol, ethanol, and CH<sub>4</sub> were measured from cows and/or their fresh manure.

Report Location

Not Available

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	US EPA	\$75,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
B. Flocchini	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
P. Robinson	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

UCD Dairy Air Quality Symposium presentation 10-11-06 available at:  
<http://www.arb.ca.gov/aq/cai/FrankMitloehnerDairySymposiumOct06.pdf>

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Project ID

11

7/18/2011

Project Category

Livestock

Estimated Completion Date

June 2007

Project Status

Completed

ProjectType

Dairy Emissions Mitigation

Project Name

Effects of Liquid Dairy Manure Aeration on Air Quality and Nutrient Cycling

Project Description

This project will evaluate the air and water emission mitigation effects of a wastewater treatment technology for California dairies to determine whether/to what extent aerobic treatment systems can cost-effectively reduce environmental impacts associated with manure storage.

Report Location

Paper is presented in the book, "Dairy Manure Management: Treatment, Handling, and Community Relations". Available for \$42 at:  
[http://www.nraes.org/nra\\_order.taf?\\_function=detail&pr\\_id=48&\\_UserReference=8429860989D767704899E01F](http://www.nraes.org/nra_order.taf?_function=detail&pr_id=48&_UserReference=8429860989D767704899E01F)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Collar	UCCE - Kings County	UC ANR	\$30,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
J. McGarvey	USDA - ARS	UCCE	
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

12

7/18/2011

Project Category

Livestock

Estimated Completion Date

2006

Project Status

Completed

ProjectType

Dairy Waste

Project Name

Characterization of Dairy Waste Management Strategies with Regard to Pathogens and Air Quality

Project Description

Examine the effect that aerobic and anaerobic treatments have on the microbiological and chemical properties of waste.

Report Location

Abstract available at:  
[http://www.ars.usda.gov/research/publications/publications.htm?SEQ\\_NO\\_115=195211](http://www.ars.usda.gov/research/publications/publications.htm?SEQ_NO_115=195211)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	USDA - ARS	\$30,300
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
R. Zhang	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

13

7/18/2011

Project Category

Livestock

Estimated Completion Date

September 2009

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Estimating and Reducing Air Emissions from Dairy Feeding Operations

Project Description

Identify and measure VOC sources in dairy feed operations

Report Location

Several study presentations, see below; no final report located.

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	USDA - CSREES	\$278,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
R. Zhang	UC Davis	USDA - ARS	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
C. Krauter	CSU Fresno	CSU Fresno	
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

[http://www.ag.iastate.edu/wastemgmt/Mitigation\\_Conference\\_proceedings/CD\\_proceedings/Animal\\_Housing-Treatment/Calvo-Freestall\\_housing.pdf](http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/CD_proceedings/Animal_Housing-Treatment/Calvo-Freestall_housing.pdf)

Related info 2

[http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809\\_201008/200905\\_FresnoCA/01\\_Zhang\\_AAQTF\\_200905.pdf](http://www.airquality.nrcs.usda.gov/AAQTF/Documents/200809_201008/200905_FresnoCA/01_Zhang_AAQTF_200905.pdf)

Project ID

14

7/18/2011

Project Category

Livestock

Estimated Completion Date

June 2008

Project Status

Completed

ProjectType

Dairy Nutrient

Project Name

Nutrient Balances in California Dairy Herds

Project Description

Data from 51 randomly selected dairy farms in Merced County, in California's Central Valley, was used to evaluate the impact of minerals in drinking water on nutrient balances and to characterize the mineral composition of manure from lactating dairy cows.

Report Location

<http://californiaagriculture.ucanr.org/landingpage.cfm?article=ca.v061n02p90&abstract=yes>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
A. Costillo	UCCE Merced	UC ANR	\$40,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
D. Bacon	UCCE Tulare		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

15

7/18/2011

Project Category

Livestock

Estimated Completion Date

March 2008

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Effects of Dietary Rumensin® on GHG and VOC Emissions from Lactating Dairy Cows

Project Description

Feed additives, like monensin sodium (monensin), have been thought to improve cattle health and productivity, and have been used for these reasons for decades. industry is the impact the dairy industry has on the environment. A main environmental concern associated with the dairy industry is the emission of volatile organic compounds (VOC) and greenhouse gases (GHG).

Report Location

[http://www.extension.org/pages/Environmental\\_Responses\\_to\\_Dietary\\_Monensin\\_in\\_Lactating\\_Dairy\\_Cows](http://www.extension.org/pages/Environmental_Responses_to_Dietary_Monensin_in_Lactating_Dairy_Cows)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	Eli Lilly-Elanco	\$50,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
E. DePeters	USDA-ARS		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
J. MacGarvey	USDA - ARS		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Hamilton, S.W., E.J. DePeters, J.A. McGarvey, J. Lathrop, and F.M. Mitloehner. 2010. Greenhouse Gas, Animal Performance, and Bacterial Population Structure Responses to Dietary Monensin Fed to Dairy

Related info 2

Project ID

16

7/18/2011

Project Category

Education

Estimated Completion Date

May 2010

Project Status

In Progress

ProjectType

Dairy Air Quality

Project Name

Western Region Dairy Odor and Air Quality Education

Project Description

The goal of this Professional Development Program grant is to reduce the environmental impacts of dairy farming in the West as a way to promote and guarantee the sustainability of the milk and cheese industries. The grant recipients plan to train agricultural professionals, selected from around the dairy producing areas of the Western region, on the best management practices available to dairy producers to mitigate the degradation of air quality. Four hands-on workshops will be conducted, introducing

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
P. Ndegwa	WSU	USDA - SARE	\$89,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mittloehner	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
R. Sheffield	Univ. of Idaho		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Other researchers from NM State (R. Hagevoort) and OSU (M. Gamroth)

Related info 2

Project ID

18

7/18/2011

Project Category

Livestock

Estimated Completion Date

2010

Project Status

Draft Report

ProjectType

Steer Emissions

Project Name

Volatile Organic Compound and Greenhouse Gas Emissions from Growing and Finishing Feedlot Steers and Their Waste

Project Description

To quantify volatile organic compounds (alcohols, volatile fatty acids, amines, and phenols) and greenhouse gas (methane, nitrous oxide, and carbon dioxide) emissions from receiving, growing and finishing feedlot steers (enteric fermentation) and fresh waste using environmental chambers at UC Davis.

Report Location

Report submitted for publication

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	California Cattlemen Assoc.	\$169,590
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
S. Trabue	USDA - ARS	California Feeder Council	\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
		ARB/CCOS	\$10,000
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Costs to be split between the two funding sources

Related info 2

Project ID

19

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2006

Project Status

Unknown

ProjectType

Equipment Study

Project Name

UC Equipment Matching Funds Program

Project Description

No description, but project cited at <http://animalscience.ucdavis.edu/faculty/Mitloehner/pdf/Grants.pdf>

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	UC Davis, Chancellor for Research	\$140,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
20

7/18/2011

Project Category  
Dairy Digester

Estimated Completion Date  
February 2009

Project Status  
Completed

ProjectType  
Covered Lagoon Emissions

Project Name  
Covered Lagoon Digester Emission Measurements

Project Description  
Measurements of NH3, methane, and VOCs at dairies with CEC funded dairy digester installations. Evaluates the Dairy Power Production Program (DPPP). The DPPP was initiated to encourage the development of biologically based anaerobic digestion and gasification (" iogas") electricity generation projects on California dairies.

Report Location  
<http://www.energy.ca.gov/2009publications/CEC-500-2009-009/CEC-500-2009-009.PDF>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
P.Sousa	WURD		\$500,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
M. Summers	Summers Consulting		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

22

7/18/2011

Project Category

Livestock

Estimated Completion Date

July 2005

Project Status

Completed

ProjectType

Dairy PM, NH3 Sources

Project Name

Agricultural sources of PM10 and ozone precursors

Project Description

Compile PM10 and NH3 emission factors. Measure concentrations of VOC relevant to to ozone formation upwind and downwind of dairies

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Flocchini	UC Davis	USDA	\$374,145
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
C. Parnell	Texas A&M		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
R. Higashi	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.reeis.usda.gov/web/crisprojectpages/192080.html>

Related info 2

Project ID

23

7/18/2011

Project Category

Livestock

Estimated Completion Date

June 2007

Project Status

Completed

ProjectType

Dairy Emissions Modeling

Project Name

Developing a Process Based Model for GHG for California Dairies

Project Description

Using biological principles and mass balance, develop a cradle-to-grave emissions model to provide greenhouse gas emissions estimates for dairies.

Report Location

<http://www.arb.ca.gov/research/rsc/2-25-10/feb10adv.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	CEC PIER	\$119,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
W. Salas	Applied Geosolutions, LLC		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
R. Zhang	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Funded with \$500,000 total - \$119,00 for Mitloehner portion

Related info 2

<http://www.westerndairies.org/2009symposium/Mitloehner.pdf>

Project ID

24

7/18/2011

Project Category

Livestock

Estimated Completion Date

2005

Project Status

Completed

ProjectType

Ammonia Modeling

Project Name

Development of a Process-Based Ammonia Model for Livestock Sources

Project Description

Develop a process-based model of ammonia emissions from five types of animal feeding operations: dairy, beef, swine, chicken, and turkey.

Report Location

<http://www.epa.gov/ttnchie1/conference/ei14/session1/mansell.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
G. Tonnesen	UC Riverside	LADCO	\$250,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Z. Wang	UC Riverside		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
R. Zhang	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
G. Mansell	ENVIRON Int'l Corp.		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5
J. Haasbeek	ENVIRON Int'l Corp.		

Related info 1

Other researchers - J. Fadel, R. Zhang, G. Mansell, J. Haasbeek.

Related info 2

Abstract on page 9 at: <http://www.epa.gov/ttn/chief/conference/ei14/final2005.pdf>

Project ID

25

7/18/2011

Project Category

Education

Estimated Completion Date

March 2005

Project Status

Completed

ProjectType

Dairy Air Quality

Project Name

Development of an Air Module Curriculum for the California Dairy Quality Assurance Program (CDQAP)

Project Description

Develop curriculum to assist producers in meeting the new air quality permit requirements

Report Location

[http://www.cdqa.org/reports/annual\\_report\\_2005.asp](http://www.cdqa.org/reports/annual_report_2005.asp)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	US EPA	\$50,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Meyer	UC Davis, CDQAP		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
M. Payne	CDQAP		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

Project ID

26

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2005

Project Status

Completed

ProjectType

Dairy Ammonia Emissions

Project Name

Laser-based Sensors for Monitoring Ammonia Emissions

Project Description

A trace-gas sensor based on fibre-amplifier enhanced photoacoustic spectroscopy has been developed for measuring ambient ammonia in agricultural settings. Field testing was performed in environmental chambers at UC Davis where the excreta from three Holstein cows were allowed to accumulate, providing a source of ambient ammonia.

Report Location

<http://www.pranalytica.com/pdf/MST-16-1547-2005.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Patel	Pranalytica, Inc.	USDA - SBIR I	\$20,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

\$79,000 total; \$20,000 for Mitloehner portion

Related info 2

Institute of Physics Publishing, Meas. Sci. Technol. 16 (2005) 1547-1553

Project ID  
27

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
December 2006

Project Status  
Completed

ProjectType  
Dairy Ammonia Emissions

Project Name  
Laser-based Sensors for Monitoring Ammonia Emissions

Project Description  
A trace-gas sensor based on fibre-amplifier enhanced photoacoustic spectroscopy has been developed for measuring ambient ammonia in agricultural settings. Field testing was performed in environmental chambers at UC Davis where the excreta from three Holstein cows were allowed to accumulate, providing a source of ambient ammonia.

Report Location  
<http://www.pranalytica.com/pdf/MST-16-1547-2005.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Patel	Pranalytica, Inc.	USDA - SBIR II	\$75,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
\$350,000 (\$75,000 for Mitloehner portion)

Related info 2

Project ID  
28

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
July 2005

Project Status  
Completed

ProjectType  
Pig Study

Project Name

Effect of Atmospheric Ammonia on Pig Welfare

Project Description

Trace-gas sensor based on fibre-amplifier enhanced photoacoustic spectroscopy has been developed for measuring ambient ammonia in agricultural settings. Field testing was performed in environmental chambers at UC Davis where the excreta from three Holstein cows were allowed to accumulate, providing a source of ambient ammonia.

Report Location

<http://www.aasv.org/shap/issues/v15n3/v15n3p137.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	National Pork Board	\$40,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

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Project ID

29

7/18/2011

Project Category

Worker Exposure

Estimated Completion Date

September 2011

Project Status

In progress

ProjectType

Dairies

Project Name

Respiratory Exposures and Health of Workers on California Dairies (NIOSH)

Project Description

Monitor exposures of 200 dairy workers at large dairies to dust and ammonia to define the concentrations of any airborne pollutants highly associated with respiratory problems.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	NIOSH	\$1,700,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
M. Schenker	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
D. Bennett	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

UC Davis' program - CA Dairy Environ Health Research Initiative (Cal-DEHRI)

Related info 2

Field phase in progress, June 2008

Project ID  
30

7/18/2011

Project Category  
Pesticide Study

Estimated Completion Date  
February 2006

Project Status  
Completed

ProjectType  
Ozone Impacts

Project Name  
Investigation of Atmospheric Ozone Impacts of Selected Pesticides

Project Description  
Develop methods for estimating and quantifying ozone impacts for selected pesticide compounds for which such estimates are not currently available.

Report Location  
Report of Jan. 10, 2007 available at: <http://www.arb.ca.gov/research/apr/past/04-334.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
W. Carter	UC Riverside	ARB	\$100,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
I. Malkina	UC Riverside		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

31

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

August 2008

Project Status

Completed

ProjectType

VOC Emissions

Project Name

Agricultural Pesticide VOC Sources and their Photochemical Ozone Formation Potential

Project Description

Improve current understanding of the photochemical O3 formation potential of VOCs from agricultural pesticide applications in the San Joaquin Valley.

Report Location

<http://www.reeis.usda.gov/web/crisprojectpages/204179.html>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Flocchini	UC Davis	USDA	\$400,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
R. Higashi	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
M. Kleeman	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
P. Green	UC Davis		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

[http://airquality.ucdavis.edu/pages/events/2008/green\\_acres/GREEN.pdf](http://airquality.ucdavis.edu/pages/events/2008/green_acres/GREEN.pdf)

Related info 2

Project ID

32

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

2005

Project Status

Completed

ProjectType

Fumigation

Project Name

Commercialization of Intermittent Water Sealing

Project Description

Identify optimal water management strategies for water sealing commercial-scale application of fumigants.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
D. Sullivan	Sullivan Environmental Consulting	USDA	\$78,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
H. Ajwa	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
J. Radewald	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://mbao.org/2005/MBAO%202005%20pdfs/Preplant/8/Sullivan.pdf>

Related info 2

Project ID

33

7/18/2011

Project Category

On-Field

Estimated Completion Date

December 2005

Project Status

Completed

ProjectType

Soil Ammonia Emisions

Project Name

Improved Statewide Estimates of Ammonia Emissions from Native Soils in California

Project Description

Develop California specific ammonia emission factors and modeling for native soils within California

Report Location

<http://www.epa.gov/ttn/chief/conference/ei12/part/krauter.pdf> (2003)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	ARB	\$200,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
C. Potter	NASA Ames		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
S. Klooster	CSU Monterey		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://geo.arc.nasa.gov/sge/casa/regional/california.html>

Related info 2

Project ID

34

7/18/2011

Project Category

On-Field

Estimated Completion Date

June 2005

Project Status

Completed

ProjectType

Crop ammonia Emissions

Project Name

Monitoring of Ammonia Emissions from Crop Production With a Tunable Diode Laser

Project Description

Evaluate the use of a TDL system for the determination of ambient ammonia levels and ammonia emissions from specific agricultural operations.

Report Location

Partial, 2005 EPA conference. <http://www.epa.gov/ttn/chief/conference/ei14/index.html> (search Krauter)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	CSU Agricultural Research Initiativ	\$296,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Goorahoo	CSU Fresno	ARB	\$148,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
B. Goodrich	CSU Fresno	Unisearch	\$148,000
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
M. Beene	CSU Fresno		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

[http://www.epa.gov/ttn/chief/conference/ei14/session1/goorahoo\\_pres.pdf](http://www.epa.gov/ttn/chief/conference/ei14/session1/goorahoo_pres.pdf)

Related info 2

Project ID

35

7/18/2011

Project Category

On-Field

Estimated Completion Date

December 2011

Project Status

In Progress

ProjectType

PM Emissions

Project Name

Cotton Gin PM Emissions Research, contract 09-01PM

Project Description

Evaluate the accuracy of US EPA's sampling methods which may significantly over-estimate PM emissions (CTM-039, P 2.5 Stack Sampling Method). Develop PM dispersion models for PM10, PM2.5, total suspended particulates (TSP). Characterize particle size, shape. Six test sites, 1 in CA.

Report Location

Quarterly reports submitted during research phase

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
D. Whitelock	ARS - SW Cotton Ginning Research Lab, ***	Various cotton industry and ginners associations	\$147,500
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
M. Buser	OK State Univ.	ARB	\$45,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
C. Boykin	Cotton Ginning Research Unit, ***	SJVAPCD	\$36,000
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

36

7/18/2011

Project Category

On-Field

Estimated Completion Date

2010

Project Status

In Progress

ProjectType

PM Emissions

Project Name

Evaluation of PM Emissions from Raisin Harvesting

Project Description

Evaluate emissions from three different table grape harvesting techniques

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	USDA-NRCS	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
J. Siliznoff	USDA-NRCS	CSU Fresno	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

37

7/18/2011

Project Category

On-Field

Estimated Completion Date

2010

Project Status

Drafting Reports

ProjectType

Emissions Mitigation

Project Name

Testing to Determine Emissions Reductions Achieved by Lower Emitting Agricultural Practices

Project Description

Evaluation of control effectiveness of two SJVAPCD Conservation Management Practices for PM (conservation tillage and combined operations)

Report Location

Draft report of Los Banos work is under reievw

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
		US EPA RARE	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

38

7/18/2011

Project Category

On-Field

Estimated Completion Date

2012

Project Status

In Progress

ProjectType

N2O Emissions

Project Name

Fertilizer N2O Research, Assessment of Baseline Nitrous Oxide and Nitric Oxide Emissions in California Cropping Systems (contract 08-324)

Project Description

Researchers are coordinating study goals and methods to evaluate flux emissions of N2O using typical fertilizer practices for each crop. Work began in June 2009. Measuring nitrous oxide flux in tomato, wheat, lettuce, rice, vineyard, orchard and alfalfa systems to develop emission factors. See also Project ID 62, contract 09-329, which adds on evaluation of nitric acid. Estimated completion dates as of Feb. 2011: ARB = June 2012; CDFA = Feb. 2012; CEC = March 2013.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
W. Horwath	UC Davis	ARB	\$300,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
J. Six	UC Davis	CEC (+ \$25K match)	\$500,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
D. Goorahoo	CSU Fresno	CDFA	\$150,000
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

See Project ID 62, contract 09-329, which is an add-on to study nitric acid

Related info 2

Project ID

39

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

October 2007

Project Status

Completed

ProjectType

VOC

Project Name

DPR Round-Robin VOC Study

Project Description

Determine ways to improve VOC emission estimates for solvents in pesticide formulations by comparing the emissions under field conditions to emissions seen in traditional TGA testing. Results showed more ozone production on the downwind side, but only slightly. Most of the VOC increase after spraying is NOT from the solvent being regulated but from EtOH in fuel. To decrease ozone, NOx reduction more important than VOC reduction.

Report Location

presentation at CDPR, date unknown:  
[http://www.cdpr.ca.gov/docs/emon/vocs/vocproj/voc\\_regional\\_ozone.pdf](http://www.cdpr.ca.gov/docs/emon/vocs/vocproj/voc_regional_ozone.pdf)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
P. Green	UC Davis	USDA-CSREES	\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
40

7/18/2011

Project Category  
Pesticide Study

Estimated Completion Date  
December 2009

Project Status  
Completed

ProjectType  
Soil VOC Emissions

Project Name  
Reducing Emissions of VOCs from Agricultural Soil Fumigation, ARB contract 05-351

Project Description  
Original study plus extension: Develop estimates for cumulative and hourly emissions rates from laboratory, field plot and predictive models which will be compared to previous large-scale field experiments on several emission reduction strategies

Report Location  
<http://www.arb.ca.gov/research/apr/past/05-351.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Scott Yates	UC Riverside	ARB	\$200,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Jay Gan	UC Riverside	USDA-ARS	\$100,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
M. Majewski	UC Riverside		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
D. Wang	UC Riverside		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5
Q. Wang	UC Riverside		

Related info 1  
ARB agreement 05-351

Related info 2

Project ID

41

7/18/2011

Project Category

Livestock

Estimated Completion Date

August 2001

Project Status

Completed

ProjectType

Dairy & Feedlot Emissions

Project Name

Sources and Sinks of PM10 in the San Joaquin Valley

Project Description

Evaluate on-field PM10 emissions. Evaluate PM10 and ammonia emissions for feedlots and dairies.

Report Location

<http://www.arb.ca.gov/research/apr/reports/l2022.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Flocchini	UC Davis	USDA	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
T. Cassel	UC Davis		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

42

7/18/2011

Project Category

On-field

Estimated Completion Date

June 2001

Project Status

Completed

ProjectType

Ammonia Emissions

Project Name

Statewide Inventory Estimates of Ammonia Emissions from Native Soils and Chemical Fertilizers in California

Project Description

Measure and model ammonia emissions from agricultural fertilizer application and natural soils. Report available at: <ftp://ftp.arb.ca.gov/carbis/reports/l522.pdf>

Report Location

<http://geo.arc.nasa.gov/sge/casa/california.html>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	ARB	\$186,425
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
C. Potter	NASA Ames	NASA Ames	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
S. Klooster	CSU Monterey		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

43

7/18/2011

Project Category

Livestock

Estimated Completion Date

June 1996

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Results of the Measurement of PM10 Precursor Compounds from Dairy Industry Livestock Waste

Project Description

Using environmental flux chambers, evaluate dairy ammonia and ROG emissions.

Report Location

<http://www.epa.gov/ttn/chief/conference/ei14/session1/schmidt.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Schmidt	Consultant	South Coast AQMD	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.aqmd.gov/rules/proposed/pr1127.html>

Related info 2

<http://www.epa.gov/ttn/chief/conference/ei14/session1/schmidt.pdf>

Project ID

44

7/18/2011

Project Category

Livestock

Estimated Completion Date

January 1995

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Results of the Measurement of Volatile Organic Compounds from Livestock Wastes

Project Description

Evaluate process specific VOCs from dairies in the Sacramento region.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Schmidt	Consultant	US EPA	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

Project ID

45

7/18/2011

Project Category

Livestock

Estimated Completion Date

January 2002

Project Status

Completed

ProjectType

Dairy Waste Management

Project Name

Survey Current Livestock Waste Management Practices in the South Coast Air Basin

Project Description

Evaluate manure management practices in the SCAQMD

Report Location

<http://www.aqmd.gov/rules/support.html#r1127>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Egigian-Nichols	Tetra Tech Inc	South Coast AQMD	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
46

7/18/2011

Project Category  
Literature Review

Estimated Completion Date  
March 2003

Project Status  
Completed

ProjectType  
Waste Management

Project Name  
Literature Survey and National Programs, Livestock Waste Management Practices Survey and Control Option Assessment

Project Description  
Literature survey of waste management and control options.  
<http://www.aqmd.gov/rules/proposed/pr1127.html>

Report Location  
<http://www.aqmd.gov/rules/support.html>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Egigian-Nichols	Tetra Tech Inc	South Coast AQMD	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

47

7/18/2011

Project Category

Livestock

Estimated Completion Date

March 2003

Project Status

Completed

ProjectType

Waste Management

Project Name

Identify Potential Waste Management Practices Reducing Ammonia and VOCs, Livestock Waste Management Practices Survey and Control Option Assessment

Project Description

Identify livestock practices to reduce emissions. <http://www.aqmd.gov/rules/proposed/pr1127.html>

Report Location

<http://www.aqmd.gov/rules/support.html>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Egigian-Nichols	Tetra Tech Inc	South Coast AQMD	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

48

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2003

Project Status

Completed

ProjectType

Waste Management

Project Name

Emissions of Particulate Matter and Ammonia from Cattle Feedyards and Dairies: a Texas-California Partnership

Project Description

Quantify the effects of water application and manure harvest frequency on PM and NH3 emission from dry lots housing beef or dairy animals (heifers).

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
B. Auvermann	TAMU CEC	National Center for Manure and Animal Waste Management	\$12,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
W. Harman	TAMU CEC		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
D. Meyer	UC Davis		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

[http://ag.arizona.edu/ANS/swnmc/Proceedings/2006/Auvermann\\_SWNMC2006.pdf](http://ag.arizona.edu/ANS/swnmc/Proceedings/2006/Auvermann_SWNMC2006.pdf)

Related info 2

[http://amarillo.tamu.edu/library/files/brent\\_auvermann\\_publications/conference\\_proceedings/preliminaryevaluation\\_18.pdf](http://amarillo.tamu.edu/library/files/brent_auvermann_publications/conference_proceedings/preliminaryevaluation_18.pdf)

Project ID  
49

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
May 2006

Project Status  
Completed

ProjectType  
Dairy Emissions

Project Name  
Evaluating Dairy Process Emissions Using Flux Chambers

Project Description  
Using environmental flux chambers at a working dairy, evaluate relative emission levels of individual process including lagoons, flush lanes, and corrals.

Report Location  
Phase II Tech Memo at: <http://www.arb.ca.gov/ag/caf/SchmidtDairyTestData2005.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Schmidt	Contractor	ARB	\$50,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
		SJVAPCD	
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2  
<http://www.epa.gov/ttn/chief/conference/ei14/session1/schmidt.pdf>

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Project ID

50

7/18/2011

Project Category

Livestock

Estimated Completion Date

December 2005

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Measuring Dairy Cow Emissions in an Environmental Chamber

Project Description

Place cows into an environmentally controlled chamber and evaluate speciated VOC emissions emitted directly from cows and from fresh waste products.

Report Location

Final Report May 31, 2006. <http://www.arb.ca.gov/ag/caf/MitloehnerDairyChamberEmissions2006.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	US EPA	\$75,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
R. Flocchini			
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
J. Peters			
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

J Environ Qual 37:615-622 (2008)

Project ID

51

7/18/2011

Project Category

Livestock

Estimated Completion Date

May 2006

Project Status

Completed

ProjectType

Dairy Emissions

Project Name

Volatile Fatty Acids, Amine, and Phenol Emissions from Cows and their Waste

Project Description

Report Location

<http://www.arb.ca.gov/ag/caf/MitloehnerDairyChamberEmissions2006.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
F. Mitloehner	UC Davis	ARB	\$200,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
S. Trabue	USDA ARS		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
J. Koziel	ISU		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
E. DePeters	ISU		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2

<http://jeq.scijournals.org/cgi/content/full/37/2/615>

Project ID

52

7/18/2011

Project Category

On-Field

Estimated Completion Date

June 2004

Project Status

Completed

ProjectType

Almond Harvest Emissions

Project Name

Improvement of PM10 emission factors for almond harvesting

Project Description

Refine existing PM10 emission factors for almond harvesting. Estimates based on measured PM10 during almond sweeping and pick up.

Report Location

<http://caaques.tamu.edu/Publications/Publications/PU01107.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Flocchini	UC Davis	Almond Board of California	
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
C. Parnell	Texas A&M		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

<http://asae.frymulti.com/abstract.asp?aid=20039&t=2>

Related info 2

Project ID

53

7/18/2011

Project Category

Livestock

Estimated Completion Date

July 2007

Project Status

Completed

ProjectType

Dairy VOC Emissions

Project Name

Photochemical Ozone Formation Potential of Agricultural VOC Sources

Project Description

Some recent estimates predict that dairy cattle are second only to on-road vehicles as a leading source of ozone precursor emissions in California's San Joaquin Valley. The objective of this work was to directly measure the ozone formation potential from dairy housing.

Report Location

[http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6VH3-4S0YXTM-2&\\_user=1928924&\\_rdoc=1&\\_fmt=&\\_orig=search&\\_sort=d&view=c&\\_version=1&\\_urlVersion=0&\\_userid=1928924&md5=e020b1203499a23d500c0127b4460438](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VH3-4S0YXTM-2&_user=1928924&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_version=1&_urlVersion=0&_userid=1928924&md5=e020b1203499a23d500c0127b4460438)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
P. Green		USDA	\$300,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
F. Mitloehner			
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
R. Flocchini			
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

presentation at CDP, date unknown:  
[http://www.cdpr.ca.gov/docs/emon/vocs/vocproj/voc\\_regional\\_ozone.pdf](http://www.cdpr.ca.gov/docs/emon/vocs/vocproj/voc_regional_ozone.pdf)

Related info 2

Alternate site for report: Go to <http://dx.doi.org> and enter "doi:10.1016/j.atmosenv.2008.02.064"

Project ID  
54

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
May 2005

Project Status  
Completed

ProjectType  
Broiler Emissions

Project Name  
Measuring Broiler Emissions in Tunnel Ventilated Housing

Project Description  
Emissions of PM10, ammonia and organic gasses were measured periodically during the 55 day poultry production cycle including 45 days of production and 10 days between broods.

Report Location  
<http://www.arb.ca.gov/ag/caf/poulemisrpt.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
M. Summers	CDFA	California Poultry Federation	\$40,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Duke	Foster Farms		
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
55

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
December 2005

Project Status  
Completed

ProjectType  
Dairy ROG Emissions

Project Name  
Evaluating Dairy Reactive Organic Gas Emissions

Project Description  
Chemically speciate ROG samples collected at dairies. Attempt to develop emission factors for dairies and some individually tested dairy processes. Further study continues in 2005-2008 (project IDs 6, 7, 8).

Report Location  
Results at 2005 US EPA Emissions Inventory Conference -  
[http://www.airquality.nrcs.usda.gov/AAQTF/Documents/Amarillo\\_2005/Presentation-CA%20Dairy%20ROGs%20\(Krauter%20AAQTF%20Amarillo%2006-05\).pdf](http://www.airquality.nrcs.usda.gov/AAQTF/Documents/Amarillo_2005/Presentation-CA%20Dairy%20ROGs%20(Krauter%20AAQTF%20Amarillo%2006-05).pdf)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
C. Krauter	CSU Fresno	ARB	\$100,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
D. Goorahoo	CSU Fresno	CSU Foundation	\$20,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
B. Goodrich	CSU Fresno		
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
M. Beene	CSU Fresno		
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
<http://www.4cleanair.org/Documents/APCODetermination.pdf>

Related info 2  
<http://www.epa.gov/ttn/chief/conference/ei15/session6/beene.pdf>

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Project ID  
56

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
September 2008

Project Status  
In progress

ProjectType  
Dairy Waste Management

Project Name  
Dairy Wastewater Treatment Feasibility Study

Project Description  
Assess the feasibility of applying standard wastewater treatment technology to the management of manure from cows in typical California dairies. EPA plans to incorporate this information into its on-going assessment of technologies for dairy manure management.

Report Location  
(When available) <http://www.epa.gov/region09/ag/dairy/technologies.html>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Trygve Lundquist	Cal-Poly SLO	US EPA	\$19,936
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
<http://www.arb.ca.gov/ag/caf/dairypanel/dairypanel.htm>

Related info 2  
<http://works.bepress.com/tlundqui/2/>

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Project ID  
57

7/18/2011

Project Category  
Pesticide Study

Estimated Completion Date  
June 2011

Project Status  
Draft Final Report

ProjectType  
Soil VOC Emissions

Project Name  
Reducing Emissions of VOCs from Agricultural Soil Fumigation: Comparing Emission Estimates from Simplified Methodology, ARB contract 07-332

Project Description  
For a single soil, determine the extent to which laboratory and modeling studies can simulate field emission data. Extend the range of emission reduction strategies assessable in the field using the laboratory and modeling approaches. Variables under investigation include columns/furrows, with tarped/untarped, VIF vs. HPDE covered beds/furrows.

Report Location  
Progress reports began in 2009

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Scott Yates	USDA-ARS-Riverside	ARB	\$100,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Daniel Ashworth	USDA-ARS	DPR	\$50,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1  
ARB agreement 07-332

Related info 2  
USDA project 5310-12130-008-05

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Project ID  
58

7/18/2011

Project Category  
Organic Waste Composting

Estimated Completion Date  
January 2010

Project Status  
Draft Report

ProjectType  
VOC Emissions

Project Name  
Emission of GHGs Resulting from Greenwaste Composting

Project Description  
Construct 5 windrows, monitor oxygen, pH, ammonia, nitrate, nitrite, nitric oxide, methane, hydrogen sulfide and moisture at the core of the windrows; collect emission flux samples using a isolation flux chamber and analyze samples for methane, carbon dioxide, nitrous oxide, and IVMNEOC for 100 days

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Fatih Buyuksonmez	UC San Diego	SJVAPCD	\$198,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
59

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
April 2010

Project Status  
In Progress

ProjectType  
NAEMS: Layer Emissions

Project Name  
NAEMS Project: Air Emissions from California Layer Farms

Project Description  
This project is for conducting a two-year measurement and monitoring of air emissions from a layer farm in CA. The emissions from two mechanically ventilated layer houses are measured. The houses have approximately 68,000 hens in cages. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are collected on ventilation, indoor and outdoor environmental

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Zhang	UC Davis	Ag Air Research Council	\$199,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID  
60

7/18/2011

Project Category  
Livestock

Estimated Completion Date  
April 2010

Project Status  
In Progress

ProjectType  
NAEMS: Broiler Emissions

Project Name  
NAEMS Project: Air Emissions from California Broiler Farms

Project Description  
This project is for conducting a two-year measurement and monitoring of air emissions from a broiler farm in CA. The emissions from two mechanically ventilated broiler barns are measured. The two broiler barns house about 42,000 broilers in each chicken production cycle. The measured emissions include ammonia, hydrogen sulfide, carbon dioxide, methane, nitrous oxide, ethanol, volatile organic compounds, total suspended particulates, PM2.5 and PM10. In addition, the detailed information and data are

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
R. Zhang	UC Davis	Ag Air Research Council	\$219,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

61

7/18/2011

Project Category

Livestock

Estimated Completion Date

February 2012

Project Status

In progress

ProjectType

Dairy N2O Emissions

Project Name

Assessment of Baseline Nitrous Oxide Emissions in California Dairy Systems, Contract 09-325

Project Description

N2O emissions will be measured in silage corn systems of three dairy farms in Stanislaus County. The N2O flux will be measured intensively, using static chamber techniques. Annual N2O emissions will be calculated. The annual N inputs in the form of solid manure, lagoon water, and synthetic fertilizer will be accounted for to enable calculation of the fraction of applied N that was emitted as N2O, i.e., the system specific emission factor.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
William Horwath	UC Davis	ARB	\$300,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
		EDF	\$100,000
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

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Project ID

62

7/18/2011

Project Category

On-Field

Estimated Completion Date

February 2012

Project Status

In Progress

ProjectType

Soil NOx Emissions

Project Name

Determining NOx Emissions from Soil in California Cropping Systems to Improve Ozone Modeling, Contract 09-329

Project Description

Add-on to contract 08-324, Project ID 38, to evaluate nitric acid emissions from fertilizer applications in several CA crops.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
William Horwath	UC Davis	ARB	\$83,500
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

63

7/18/2011

Project Category

Biogenics

Estimated Completion Date

May 2011

Project Status

In progress

ProjectType

Ozone Emissions

Project Name

Flux Measurements of Biogenic Precursors to Ozone and Particulate Matter in the Central Valley, Contract 06-329

Project Description

Develop BVOC simulation platform for central valley agricultural operations and test the modeling performance through ozone and aerosol nucleation event measurements. Micro-meteorological to landscape level emission flux measurement program for certain selected crops identified during the screening phase.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Allen Goldstein	UC Berkeley	ARB	\$400,003
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
John Karlik	UC Berkeley, Ag Extension		\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

64

7/18/2011

Project Category

Biogenics

Estimated Completion Date

June 2013

Project Status

ProjectType

VOC Emissions

Project Name

Improving Regional Biogenic VOC Emissions Estimate Using an Airborne PTR MS Eddy Flux Measurement System, contract 09-339

Project Description

Collect regional concentrations data for the full suite of BVOC species, develop new land cover databases, with proper scaling methodology. The results of this project would strengthen ARB BVOC inventory and improve the modeling of ozone and aerosols in ARB SIP.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Allen Goldstein	UC Berkeley	ARB	\$400,000
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Alex Guenther	Natl Center Atm Research		\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
Halfidi Jonsson	CIRPAS		\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

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Project ID

65

7/18/2011

Project Category

Dairy Digester

Estimated Completion Date

December 2010

Project Status

Draft protocol

ProjectType

Removing H2S from Biogas

Project Name

Removal of H2S from Biogas and NOx from Engine Exhaust at a Dairy Digester Using Microwave Technology, contract #ICAT 0803

Project Description

The project will monitor the performance of the H2S removal system and the NOx removal system on the biogas powered engine at the Tollenaar Holsteins Dairy Farm. Anaerobic digester gas (biogas) is captured from a heated, mixed digester and used to fuel a 212 kW Guascor engine-generator. H2S is currently removed from the biogas using an aerated water bubbler system (Soloscrub).

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Mark Rawson	SMUD	SMUD	\$246,309
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Chang Cha	Cha Corporation		\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
Dan Greenberg	Applied Filter Technology		\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

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Project ID

66

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

2007

Project Status

Completed

ProjectType

Fumigant Emissions

Project Name

Reductions of Fumigant Emissions using Irrigation and Virtually Impenetrable Film (VIF)

Project Description

Reductions of Fumigant Emissions using Irrigation and Virtually Impenetrable Film (VIF) for 1,3-D, chloropicrin, methyl bromide

Report Location

[http://www.agecon.ucdavis.edu/extension/update/articles/v9n5\\_3.pdf](http://www.agecon.ucdavis.edu/extension/update/articles/v9n5_3.pdf)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Steve Fennimore	UC Davis	USDA-CSREES	\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
Husein Ajwa	UC Davis	Stawberry Commission	\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

67

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

2006

Project Status

Completed

ProjectType

Fumigant Emissions

Project Name

Reductions of Fumigant Emissions using Irrigation and Virtually Impenetrable Films (VIF)

Project Description

Reductions of Fumigant Emissions using Irrigation and Virtually Impenetrable Films (VIF) for 1,3-D and Chloropicrin

Report Location

[http://www.epa.gov/osp/hstl/AgCon.proceedings\\_print.pdf](http://www.epa.gov/osp/hstl/AgCon.proceedings_print.pdf)

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Thomas Trout	USDA-ARS		\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
S. Gao	USDA-ARS		\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

68

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

2007

Project Status

Completed

ProjectType

Fumigant Emissions

Project Name

Reductions of Fumigant Emissions using Irrigation and Virtually Impermeable Films (VIF)

Project Description

Reductions of Fumigant Emissions using Irrigation and Virtually Impermeable Films (VIF) for 1,3-D, Chloropicrin and methyl bromide

Report Location

[http://www.ars.usda.gov/research/publications/publications.htm?SEQ\\_NO\\_115=185](http://www.ars.usda.gov/research/publications/publications.htm?SEQ_NO_115=185)  
286

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Husein Ajwa	UC Davis	UC Davis	\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

69

7/18/2011

Project Category

Pesticide Study

Estimated Completion Date

2007

Project Status

Completed

ProjectType

Fumigant Emissions

Project Name

Reductions of Fumigant Emissions using Irrigation

Project Description

Evaluation of reductions in fumigant emissions using tarps; focus on 1,3-D.

Report Location

<http://mbao.org/2008/035Ajwa.pdf>

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Husein Ajwa	UC Davis	UC Davis	\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
			\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

Project ID

70

7/18/2011

Project Category

On-field

Estimated Completion Date

May 31, 2013

Project Status

In progress

ProjectType

N2O Modeling

Project Name

Calibrating, validating, and implementing process models for CA agriculture greenhouse gas emission estimation, ARB agreement 10-309

Project Description

Improve earlier attempts of companion projects to calibrate & validate N2O models for Ca conditions and estimate N2O emissions for CA crop specific fertilizer levels, measure N2O flux and physical variables.

Report Location

PI 1	Affiliation PI 1	Fund Source 1	Amount 1
Changsheng Li	Univ New Hampshire	ARB	\$0
PI 2	Affiliation PI 2	Fund Source 2	Amount 2
William Salas	Applied Geosolutions, LLC		\$0
PI 3	Affiliation PI 3	Fund Source 3	Amount 3
			\$0
PI 4	Affiliation PI 4	Fund Source 4	Amount 4
PI 5	Affiliation PI 5	Fund Source 5	Amount 5

Related info 1

Related info 2

