

**COUNTY OF SAN LUIS OBISPO BOARD OF SUPERVISORS
AGENDA ITEM TRANSMITTAL**

(1) DEPARTMENT Agricultural Commissioner	(2) MEETING DATE August 22, 2006	(3) CONTACT/PHONE Bob Lilley 781-5910	
(4) SUBJECT Report From the Genetically Engineered (GE) Crop Committee			
(5) SUMMARY OF REQUEST Board Business meeting to hear the report from the GE Crop Committee and public testimony			
(6) RECOMMENDED ACTION Receive and File staff report and attachments including the Co-existence Methods Table from the GE Crop Committee			
(7) FUNDING SOURCE(S) Within current allocation	(8) CURRENT YEAR COST Within current allocation	(9) ANNUAL COST Within current allocation	(10) BUDGETED? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
(11) OTHER AGENCY/ADVISORY GROUP INVOLVEMENT (LIST): UC Cooperative Extension, County Counsel, California Department of Food and Agriculture, California Department of Pesticide Regulation, various agricultural organizations and institutions.			
(12) WILL REQUEST REQUIRE ADDITIONAL STAFF? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, How Many? _____ <input type="checkbox"/> Permanent _____ <input type="checkbox"/> Limited Term _____ <input type="checkbox"/> Contract _____ <input type="checkbox"/> Temporary Help _____			
(13) SUPERVISOR DISTRICT(S) <input type="checkbox"/> 1st, <input type="checkbox"/> 2nd, <input type="checkbox"/> 3rd, <input type="checkbox"/> 4th, <input type="checkbox"/> 5th, <input checked="" type="checkbox"/> All	(14) LOCATION MAP <input type="checkbox"/> Attached <input type="checkbox"/> N/A	(15) Maddy Act Appointments Signed-off by Clerk of the Board <input checked="" type="checkbox"/> N/A	
(16) AGENDA PLACEMENT <input type="checkbox"/> Consent <input type="checkbox"/> Hearing (Time Est. _____) <input type="checkbox"/> Presentation <input checked="" type="checkbox"/> Board Business (Time Est. 2 hours)	(17) EXECUTED DOCUMENTS <input type="checkbox"/> Resolutions (Orig + 4 copies) <input type="checkbox"/> Contracts (Orig + 4 copies) <input type="checkbox"/> Ordinances (Orig + 4 copies) <input checked="" type="checkbox"/> N/A		
(18) NEED EXTRA EXECUTED COPIES? <input type="checkbox"/> Number: _____ <input type="checkbox"/> Attached <input type="checkbox"/> N/A	(19) BUDGET ADJUSTMENT REQUIRED? <input type="checkbox"/> Submitted <input type="checkbox"/> 4/5th's Vote Required <input type="checkbox"/> N/A		
(20) OUTLINE AGREEMENT REQUISITION NUMBER (OAR) _____	(21) W-9 <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	(22) Agenda Item History <input type="checkbox"/> N/A Date _____	
(23) ADMINISTRATIVE OFFICE REVIEW <div style="text-align: right; font-family: cursive; font-size: 1.2em;"> <i>Vand Mencia</i> </div>			

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COUNTY OF SAN LUIS OBISPO

Department of Agriculture/Weights and Measures

2156 SIERRA WAY, SUITE A • SAN LUIS OBISPO, CALIFORNIA 93401-4556
ROBERT F. LILLEY (805) 781-5910
AGRICULTURAL COMMISSIONER/SEALER FAX (805) 781-1035
www.slocounty.ca.gov/agcomm AgCommSLO@co.slo.ca.us

TO: BOARD OF SUPERVISORS

FROM: BOB LILLEY, AGRICULTURAL COMMISSIONER/SEALER

DATE: AUGUST 22, 2006

SUBJECT: REPORT FROM THE GENETICALLY ENGINEERED (GE) CROP COMMITTEE

Recommendation:

Receive and file staff report and attachments including the Co-existence Methods Table from the GE Crop Committee

Discussion:

The San Luis Obispo County Agricultural Commissioner has worked with a group of local farmers and representatives from agricultural organizations to evaluate agricultural issues associated with growing genetically engineered crops in San Luis Obispo County. The agricultural committee has produced a Co-existence Methods Table (attached) which will be presented to your board during the Business Meeting August 22, 2006.

The following provides a chronology of events since genetically engineered crops became a public issue locally in 2004:

- March 2004 - San Luis Obispo County was included in a “protocol for production of genetically modified rice” by the California Rice Commission.
- April 20, 2004 - The Agricultural Commissioner provided your Board with a status report on the decision of the California Rice Commission and an introduction to the issue of genetically engineered crops.
- July 13, 2004 - Your Board approved a “submittal of the Certificate of Sufficiency-An Initiative Petition to Establish a County Ordinance Prohibiting the Growing of Genetically Engineered Organisms in San Luis Obispo County” to be placed on the November 2, 2004 ballot (Measure Q).

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- August 3, 2004 - Your Board accepted and filed a report on Genetically Engineered Crops in San Luis Obispo County from a six member committee made up of representatives from the following groups:
 - University of California Cooperative Extension (facilitator)
 - SLO GE Free
 - San Luis Obispo County Farm Bureau
 - California Certified Organic Farmers
 - San Luis Obispo County Health Agency
 - San Luis Obispo County Agricultural Commissioner
- November 2, 2004 - Measure Q failed.
- Nov-Dec 2004 - Your Board continued to hear general concern about GE crops and GMO food during public comment.
- December 15, 2004 - The Agricultural Commissioner, Farm Bureau, Cooperative Extension, and Cal Poly representatives met with then upcoming chair Supervisor Bianchi, to discuss an approach to address continued public concern. It was agreed to split the issue into two components, GE Crops and GMO Food, and have them addressed separately. It was further agreed not to continue to debate a ban on GE Crops (Measure Q defeated) but to provide educational forums and report the results back to the Board of Supervisors.
- January 6, 2005 - The Agricultural Commissioner released a summary titled “GE Crops in San Luis Obispo County” (attached) explaining a local outreach approach to promote an agricultural industry dialogue.
- January 2005 - The Agricultural Commissioner and the County Health Officer communicated regarding forming two separate committees.
- February 2005 - AB 984, Liability: genetically engineered plants, was introduced but later failed.

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- January-April 2005 - The Agricultural Commissioner communicated the planned agricultural review of GE Crops to local agricultural industry associations.
- April 2005 - The Health Commission formed the GMO Task Force (which will report separately to your Board).
- April 2005 - The agricultural GE Crop committee was formed and agreed to a scope of work (more detailed information will follow).
- April 2005 - The revised Federal regulations for GE crops were not posted as proposed and continue to be developed.
- May 2005 to July 2006 - The agricultural GE Crop committee met 11 times, approximately once per month.
- February 2006 - The California Agricultural Commissioner and Sealers Association adopts a legislative platform statement on Biotechnology supporting federal regulation and supporting the rights of agricultural producers to utilize any lawful tools for agricultural production.
- February 2006 - California Senate Bill 1056/Florez was introduced, which provides for state preemption of the regulation of seed and nursery stock (including genetically engineered seed or nursery stock). The Bill has been amended six times and continues to move through the legislative process.
- March 2006 - The GE Crop committee receives a summary of the legal landscape for liability associated with genetically engineered organism contamination (attached) from county counsel.
- March 2006- Committee members heard and evaluated Cal Poly grad student presentations on genetically engineered crops.
- July 2006 -The GE Crop committee holds the last meeting and prepares for the August 22 Board of Supervisors presentation.

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The subject of GE crops and GMO foods is of international significance. International trade agreements address and control commerce in this field. In the United States the federal government regulates GE crops. This is done through the USDA (lead agency), the US EPA (GE crops with “pesticidal properties”), and FDA (food and pharmaceutical applications). Revised federal regulations are still under development. The State of California currently yields to federal regulations for GE crops.

Many counties in California have addressed the issue of GE crops. A map of California Counties (attached) shows the various level of activity by county (note the map is only current as of 8-12-05).

Currently, we are aware of GE corn (known as BT corn) grown in San Luis Obispo County as well as interest in GE Alfalfa (newly released and known as Round-up Ready Alfalfa). No other GE crops are known to be grown locally, however the technology is widely used in other parts of the state and nation and many potential applications are under development. In addition, outdoor test plots still in the development stage under USDA permits, could be occurring in San Luis Obispo County. The committee did not review any pharmaceutical or industrial applications of GE crop technology.

The agricultural committee was composed of the following members:

- Bob Lilley – Ag. Commissioner/facilitator
- Jackie Crabb – Farm Bureau
- Dana Merrill – Grape Grower
- Ryan Rich – Organic Grower/President San Luis Obispo Chapter, CCOF
- Karen Mansfield – Ag. Task Force
- Jean-Pierre Wolff – Grape Grower
- Marc Lea – Ag. Commissioner’s Office
- Mary Bianchi – Farm Advisor
- Neal MacDougall – Cal Poly Sustainable Agriculture Resource Consortium (SARC)
- John DeVincenzo – Corn Grower
- Bill Spencer – Corn Grower

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The agricultural GE Crop committee agreed to focus the discussion on two crops. The previous committee (2004) provided your Board with a lengthy and broad-based evaluation of GE crops so it was determined appropriate to provide further detailed analysis of two specific crops. Wine grapes was chosen because it is our number one crop in the county and there is genetic research currently underway seeking a cure for Pierce's Disease; and, corn was later chosen because it is an open (wind) pollinated crop with existing GE applications. It was noted by the committee that each individual crop is quite different as it relates to genetic engineering, and may represent different levels of possible risk and potential for successful co-existence. Subsequently, there exists a range of co-existence determined by the adequacy of the co-existence measures and implementation. The evaluation of the two chosen crops may not reflect the level of co-existence for other GE crop applications.

The committee was broad-based and often had spirited conversation around the topic. Although many related topics were discussed, the Co-Existence Methods Table represents the work product from the group. The table has been circulated statewide and may be considered a possible continued approach towards addressing GE crop issues. Some members of the committee were not convinced that co-existence was a desired option (or even possible), especially between organic and GE crop applications, while others felt co-existence was an achievable outcome. However, the committee agreed to proceed with the development of the Co-existence Methods Table.

The Co-existence Table represents a range of possible co-existence methods that relate to agricultural practices for pre-production, in field production, and harvest/post harvest activities. One possible end point of the co-existence relationship is no practical means of co-existence, while the other end point would be complete co-existence that requires no special conditions. The co-existence methods were determined through research of existing GE crop applications (where available), but largely from practices currently utilized for conventional agricultural production and harvesting.

The implementation of the potential co-existence methods still need further industry and public review to determine adequacy and follow-through. Some members of the committee argue that a necessary first step to implement co-existence methods is a local notification system (to the Agricultural Commissioner) when planting GE crops so adequate coordination, communication, and implementation can occur. Most of the committee members recognize some value in notification but there is not agreement as to if it should be voluntary or mandatory (which would require your Board to adopt a local ordinance).

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It was determined appropriate, as the next step, to ask for agricultural industry review of the Co-Existence Methods Table and possible methods of implementation. Alfalfa was discussed as a crop to replace grapes since there currently is GE alfalfa available on the market.

The committee accomplished the goal of developing a dialogue and increasing the level of education regarding growing GE crops in San Luis Obispo County. San Luis Obispo County is generally ahead of the other California counties in the discussion of GE crops.

Other Agency Involvement:

The UC Cooperative Extension, County Counsel, California Department of Food and Agriculture, California Department of Pesticide Regulation and various agricultural organizations and institutions.

Financial Considerations:

The cost, to date, is absorbed through existing budget units.

Intended Results:

To present to your Board and the public agricultural information regarding GE crops, and provide for the introduction of a Table of Co-existence Guidelines to address growing GE, conventional and organic crops in San Luis Obispo County. An agricultural industry review of the potential implementation of co-existence guidelines may follow depending on the level of interest in commodity and trade (such as organic growers) groups, which may want to use available GE crops.

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CO-EXISTENCE METHODS BY COMMODITY, THEIR CURRENT APPLICATIONS IN SAN LUIS OBISPO COUNTY AGRICULTURE, AND IMPLEMENTATION OF GUIDELINES – Final draft 2006

		PRE-PRODUCTION PRACTICES	IMPLEMENTATION
COEXISTENCE METHOD	COMMODITY	CURRENT APPLICATIONS	Comments in this column are input from commodity representatives for consideration by industry
COMMUNICATION about decisions, including crop choice, rotations (V, Ma, Minn)	General Winegrapes	Growers decide the best way to communicate information and the resources for technical support (University, CDEA, County Ag, etc.) Technical service providers not standard for all crops. Good neighbor relationships, Grower associations, Grape acreage reports (industry, county, state)	
IDENTIFICATION Ascertain plant or seed purity, seed lines, variety selection, tests for adventitious presence (V, B, Ma, Minn)	General Winegrapes Corn	Due diligence at time of purchase ENTAV certification and licensing (intellectual property), Certified Nursery Stock, Foundation Plant Material Service disease status, nurseries Association of Official Seed Certifying Agencies (AOSCA) purity standards for certified seed average 98% across species (AOSCA, 2003). California Crop Improvement Association (CCIA) http://ccia.ucdavis.edu . Branded and patented varieties (for GE have protections in place for both the seed producer and grower) vs non GE or heirloom (patent ran out or non-patented varieties and there are fewer if any protections). Germplasm repositories USDA? supported.	

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General	Due diligence for production, e.g., organic regulations, contract requirements, patent requirements, government regulations, identity preservation
Winegrapes	ENTAV certification and licensing (intellectual property), Certified Nursery Stock, Foundation Plant Material Service disease status, nurseries
RECORD KEEPING Who, what, when, where, how, and why (B&B, Ma, Minn)	Association of Official Seed Certifying Agencies (AOSCA) purity standards for certified seed average 98% across species (AOSCA, 2003). California Crop Improvement Association (CCIA) http://ccia.ucdavis.edu . Branded and patented varieties (for GE have protections in place for both the seed producer and grower) vs non GE or heirloom (patent ran out or non-patented varieties and there are fewer if any protections). Germplasm repositories USDA? supported. 100,000 seed minimum purchase
Corn	Possible actions: Visual labeling (dyes?) of seeds for quick identification of source; storage of GE seeds in pesticide storage

IN-FIELD PRODUCTION PRACTICES (ISOLATION)

COEXISTENCE METHOD	COMMODITY	CURRENT APPLICATIONS	IMPLEMENTATION
<p>PHYSICAL BARRIERS TO GENE FLOW (Ma, Mimn)</p>	General	Windbreak, hedgerow, permanent crops, manufactured barriers	
	Winegrapes	Bird netting impacts to mealybug movement	Grapes are self-pollinating. Flow noted in V. californica
	Corn	Current production is widely dispersed and limited in acreage.	Microclimates and topography limit corn production in SLO.
<p>BUFFER MECHANISMS</p> <p>distances between crops; sequence of planting dates (V, B, Ma, Mimn)</p>	General	Rotation, crop-specific buffer systems, offset pollination periods	
	Winegrapes	Spatial buffers for pesticide drift	Varietal selection and roguing – single selection grown per year. Sequence planting dates for different varieties to isolate pollen sources.
	Corn	Seed isolation systems in CA. Varietal selection and roguing – single selection grown per year. Sequence planting dates for different varieties to isolate pollen sources.	California's limited production means Midwest standards of 660 are currently used for buffers – don't have information if this is appropriate for SLO.

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General
Integrated Pest Management, rotation, refuges,
trap crops (alfalfa and Lygus in strawberries),
CDFA/Ag Comm Host Free Periods

Winegrapes
Phylloxera resistant rootstock or lack thereof,
Herbicide tolerance in mare's tail (*Conyza*)

PEST RESISTANCE
MANAGEMENT
PLANS
(B&B, Ma, Mimm)

Corn
Non Bt selections or pesticide selections for
refuge areas.
Weed management through rotation into non
herbicide tolerant selections or through rotation of
chemicals

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HARVEST POST-HARVEST PRACTICES

COEXISTENCE METHOD	COMMODITY	CURRENT APPLICATIONS	IMPLEMENTATION
<p>SANITATION Field sanitation. Calibration, cleaning of rented, custom or own planting, harvesting, transport equipment, storage (V, B, B&B, Ma, Minn)</p>	<p>General Winegrapes Corn</p>	<p>Removal of volunteer plants. Organic regulations, contract requirements (e.g. certified seed production, pest sanitation) patent requirements, identity preservation Industry standard practice for cleanliness and sanitation of harvesting and delivery equipment. Mandated for wines from organic grapes; standard wine-making practice Field rotation, eliminate volunteer corn.</p>	<p>Maternal tissue in berries; DNA only in seeds</p>
<p>SEGREGATION Tests for adventitious presence, transport, storage (V, B, B&B, Ma, Minn)</p>	<p>General Winegrapes Corn</p>	<p>Organic regulations, contract requirements, patent requirements, identity preservation Shipping tag control systems, tagging systems for GWSS shipments; segregation of grape and wine lots; contractual requirements food safety Post-harvest segregation between organic and conventional products; identity preservation systems for certified seed production</p>	<p>Economic loss doctrine; disappointed commercial expectations.</p>
<p>LIABILITY Tort liability (strict liability, trespass, nuisance, negligence, patent infringement liability) **</p>	<p>General Winegrapes Corn</p>	<p>Tort Law currently applies unless GE crops are found to be fundamentally different. Limited case law. Unknown implications for both GE and non-GE producers. Pesticide use or drift. Materials proscribed by contract. Wine-making specifications tightly controlled by winery.</p>	<p>Liability from growing crops appear to be minimal.</p>

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MARKET REQUIREMENTS Sampling and testing protocols, rejection levels or tolerances, paper trail, traceability, labeling	General	Voluntary Labeling Guidelines for Foods Using Bioengineering can be found at www.cfsan.fda.gov/~dms/biolabgu.html .	
	Winegrapes	Winery contract requirements. Processing requirements (yeasts). Country of origin labeling (COOL), Tax and Trade Bureau labeling for origin and varietal identification	Possible negative impacts on markets.
	Corn	Segregation between organic and conventional products; identity preservation systems	

** Information on Patent Infringement Liability is also important for growers to understand. In absence of regulatory programs, liability risk may be increased.

Sources for Methods: V – Vermont. Grubinger and Deziel. 2002. University of Vermont Extension. Transgenic Crop Production in Vermont: Strategies for Co-existence.
 B – Bradford k. 2005. Methods to Maintain Genetic Purity of Seed Stocks
 B&B – Brookes and Barfoot. 2004. Co-existence in North American Agriculture: Can GM Crops be Grown with Conventional and Organic Crops?
 Ma – Maine Department of Agriculture. Date?. A Plan for CoExistence
 Minn – University of Minnesota. 2004. A Plan for Co-Existence.

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Department of Agriculture/Weights and Measures

2156 SIERRA WAY, SUITE A • SAN LUIS OBISPO, CALIFORNIA 93401-4556

ROBERT F. LILLEY

(805) 781-5910

AGRICULTURAL COMMISSIONER/SEALER

FAX (805) 781-1035

www.slocounty.ca.gov/agcomm

AgCommSLO@co.slo.ca.us

GE Crops In San Luis Obispo County

Introduction:

Despite the recent defeat of Measure Q in San Luis Obispo County, there is still considerable interest in the subject of genetically engineered crops. To address this ongoing interest, the Agricultural Commissioner will be initiating an effort to promote agricultural industry dialogue concerning production and marketing GE crops in San Luis Obispo County.

Summary:

The Agricultural industry, Agricultural Commissioner, and UC Cooperative Extension are planning a cooperative outreach and fact finding program to assess issues related to growing GE crops locally, the compatibility of conventional, organic and GE Crops, and marketing of GE Crops produced in San Luis Obispo County. Two commodity groups may be selected to narrow the scope and increase the effectiveness of this outreach effort. Wine grapes will be the first crop examined since it is the leading crop in SLO County and has potential GE application. A second crop, yet to be determined, would likely be an open pollinated crop to help assess issues related to potential pollen drift and coexistence with non GE Crops. The program will be directed at agriculturalists, both conventional and organic. It is intended to be an interactive fact finding exercise, and could also involve the development of coexistence guidelines, and a review of the proposed USDA GE Crop regulations due to be posted March 2005. The scope of this effort will be the production and marketing of such crops. Excluded from the agricultural discussion will be Measure Q, a local moratorium, the health effects of consuming GE crops, labeling of GE foods at the retail level, and other issues not related to production agriculture. These topics are also important but not within the scope of this exercise or the expertise of local agriculturalists or the Agricultural Commissioner's Office.

Potential Program Elements:

- The Program will focus on the agricultural industry and will be under the Direction of the Agricultural Commissioner.
- Results of the effort will be reported to the Board of Supervisors and the California Department of Food and Agriculture.
- The target audience will be made up of representatives from the selected commodity groups and organizations, Farm Bureau, and the California Certified Organic Farmers.
- The UC Cooperative Extension will provide assistance to the Agricultural Commissioner in organizing, facilitating, and evaluating results. Cal Poly Professors and crop researchers may be included for their technical expertise.
- Feedback from agricultural representatives will be utilized to develop a summary of their understanding of GE crops, identify key issues and concerns, and evaluate the need for coexistence guidelines for planting GE crops in San Luis Obispo County.
- The USDA regulatory changes for GE Crops, due to be posted March 2005, will be reviewed for possible effects here in SLO County.
- Production agricultural concerns will be evaluated to address issues such as the need for buffers, pest resistance management, gene flow, and other production related topics.
- Agricultural commodity marketing issues will be evaluated including commodity identification and segregation, marketing of GE Crops, potential impacts to organics growers, and market place reaction.
- Recognizing the complexity of the issues and the importance of regular grower attendance at meetings, the time line will need to be flexible and may be extended through much of 2005.

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INTRODUCTION

The legal landscape for liability associated with genetically engineered organism (GEO) contamination is far from well established. In fact, it is undeveloped territory, slowly taking shape as controversies wind their way through the courts. Only a few reported cases involving claims of GEO contamination exist. They have attempted to apply traditional legal grounds for liability. This outline briefly sets out the legal theories that, while untested, may find their way to GEO liability cases.¹ A review of the potential for application of these theories to GEO situations raises more questions than are answered.

The theories addressed are:

1. Strict liability
 - due to engaging in an abnormally dangerous activity
 - product liability
2. Nuisance
3. Negligence
4. Trespass
5. Patent infringement by the non-GEO party

1. STRICT LIABILITY

Abnormally dangerous activity: A person can be strictly liable if he/she engages in activity that:

- Creates a high degree of risk of harm to a person, land or property
- And the result of the risk will be great;
- There is an inability by the injured party to eliminate the risk by the exercise of reasonable care;
- The activity is not a matter of common usage;
- The activity is inappropriate to where it is carried on; and
- The value to the community is outweighed by the dangerous attribute.
- It is a defense if the injured party intentionally acted to expose himself/herself to the known risk.

Analogous situation - Some states hold defendants strictly liable for contamination from crop-dusting drift. California has not, although one case did allow such a case to go to the jury. Another, without a final verdict, did note that PCB drift from an exploding electric transformer may be a basis for strict liability.

¹ This memo is based upon a review of law review articles by legal commentators. It is not an exhaustive analysis as the sparsity of case law prevents us from forming solid opinions upon the direction legal liability will take in the GEO arena.

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Manufacturing defects are when:

- The product differs from the manufacturer's design or specifications.

Questions that may arise in the GEO situation:

- Is a product defectively designed where, when used as intended, it:
 - Could cause irreversible harm to neighboring farms through drift;
 - Drift cannot be avoided by reasonable care.
- Are GEO's that drift or contaminate, by definition, defectively designed?
 - Must develop products that do not have this characteristic?
- What is the relative balance of the risk versus the benefits of the particular GEO product in question?
 - Consider the same facts as dangerous activity balancing.
- Does Federal law preempt use of this theory?
 - Federal statutes regarding use of registered pesticides may limit lawsuits arising from use.
 - Federal statutes regarding labeling may limit lawsuits claiming failure to warn.
- What are the known dangers to warn about?
 - GEO's have unpredictable reactions to pests, other plant, hybridizing, so cannot predict what to warn. Is it fair to impose liability?
 - This will turn upon the state of scientific development at the time of manufacture and use.
 - One person's danger may be another's benefit, i.e. organic farmer no longer organic but has increased pest resistance.

2. NUISANCE

A nuisance is anything injurious to health, indecent or offensive to the senses, an obstruction to the free use of the property, interfering with enjoyment of life or property (Civil Code, § 3479)

- Must substantially and unreasonably interfere with one's enjoyment of land.
- The action of defendant can be negligent, intentional or reckless.

Public nuisance: Effects the entire community or considerable number of persons and is usually brought by public entity:

- Weigh the utility of the conduct against the gravity of the harm to the public.

Private nuisance: If the public in general is not harmed then it is a private nuisance between individuals.

Possible defense - the comparative negligence of plaintiff may be a defense if the defendant is also negligent. But:

- Comparative negligence is not a defense if the defendant acts intentionally.
- Due care by defendant is not a defense.

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- GEO activities for three plus years in a locality may restrict nuisance as a basis for liability.
 - May limit where non-GEO activities can go in the future.

3. NEGLIGENCE

A person is negligent if it breaches its duty to exercise due care to avoid foreseeable risk of harm to others. Consider:

- What would an ordinarily prudent person do under the circumstances; this may vary with changing circumstances.
- The risk must be foreseeable.
- Duty may be set for public policy reasons.
- Statutes and regulations set a standard of non-negligent conduct.

- **Possible defenses:**
 - Comparative negligence
 - Failure to mitigate damages
 - Federal preemption – Federal regulations and statutes that govern GEO or authorize use may be a defense as an “authorization” of the use in a particular manner.
 - Assumption of the risk – the voluntary and knowing exposure to an obvious danger inherent in certain activities.

Questions that may arise in the GEO situation:

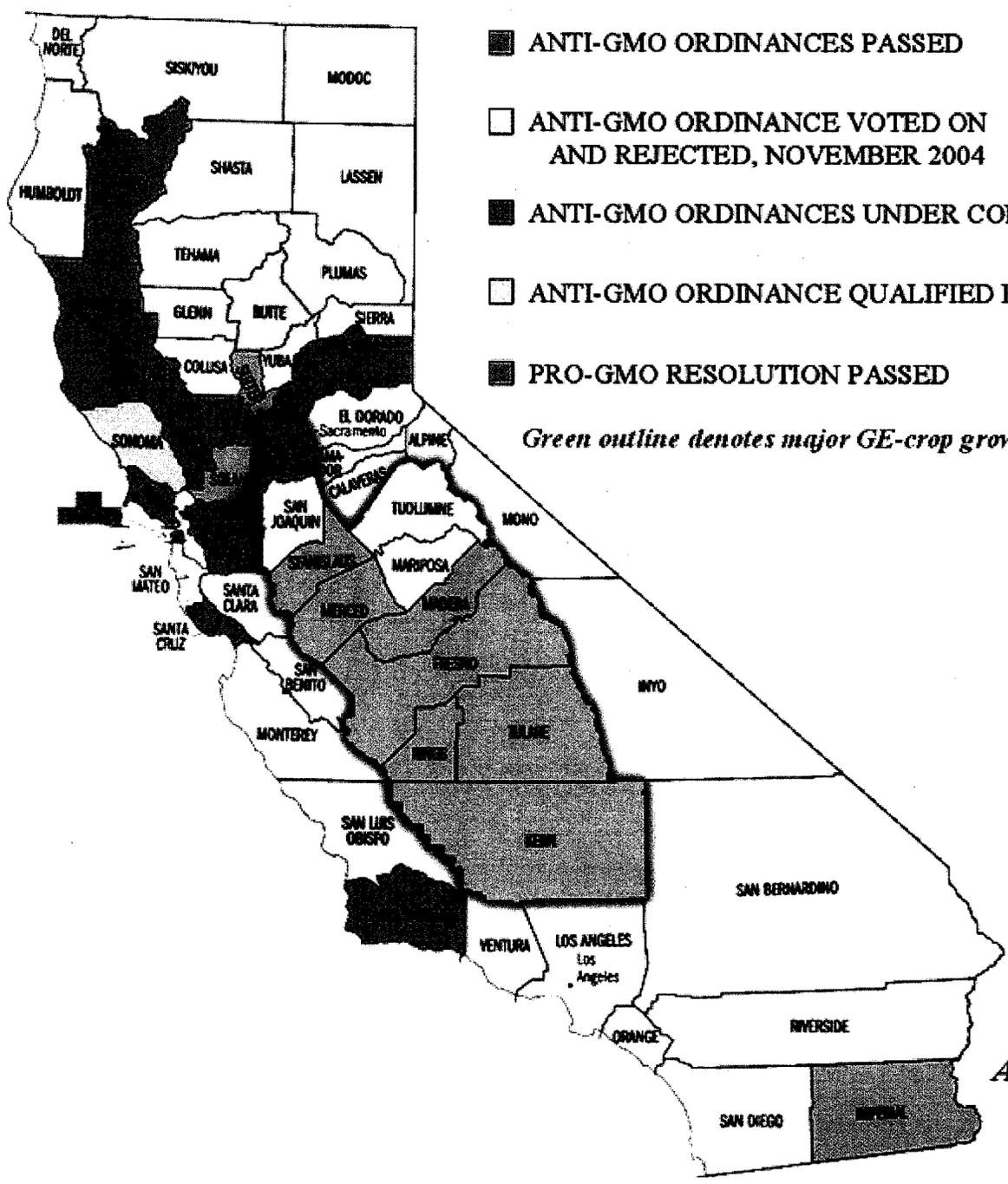
- Is plaintiff's injury foreseeable to the GEO user?
- Did the GEO use follow best practices which may be considered the standard for duty/foreseeability, i.e., buffer zones, warnings?
- Does governmental authorization of GEO product through law and regulation establish standard for duty/foreseeability?
- Scientific evidence may be necessary to explain foreseeability of harm given the state of the biotechnology industry.
- Are there public policy reasons to find liability that would encourage precautions (buffers, cleaning equipment; research into non-contaminating products)? Consider:
 - The extent of the injury to the plaintiff;
 - The moral blame of the defendant's conduct;
 - The burden on the defendant to take precautions;
 - The consequences to the community of imposing duty; and the insurability of the risk.
- If there are multiple GEO users in the locality, which one caused the injury? Scientific evidence will be necessary.

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- Lack of knowledge of the patent's existence is irrelevant. Since GEO plants/products are not readily identifiable, inadvertent user will not know if it is infringing.
- Stopping infringement in GEO situation may be difficult even after notice because there is no way to visually identify infringing, GEO plant.
 - If Roundup Ready plants are infringers defendants could spray Roundup. However, non-infringing plants would be destroyed.
 - Dormant seeds may emerge later.
 - Removal of soil as a means to stop expensive.
 - The infringer has no way to prevent further infringement through drift.

Damages:

- Willful infringer may be liable for treble damages and attorney's fees.
- Intentional infringement is presumed after defendant has notice.
- Only actual damages for unintentional infringement.



Green outline denotes major GE-crop growing areas

As of 8/19

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