IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF SAN DIEGO

In re:

_____ or any Occupant

707 Quail Street

San Diego, CA 92102

_____

INSPECTION AND ABATEMENT WARRANT (FORCIBLE ENTRY)

Code of Civil Procedure §§ 1822.50 *et seq.*
Health and Safety Code §§ 2040 – 2050

Case No. E2016-~~0615~~ 619

The People of the State of California to any Vector Control Technician, Department of Environmental Health for the County of San Diego: PROOF, by declaration, has been made this day before me by Senior Vector Ecologist Greg Slawson, (1) that *Aedes aegypti* mosquitoes are present and breeding in the area within the City of San Diego bounded by F Street on the north, Market Street on the south, Raven Street on the east and Quail Street on the west, and that the presence of the Zika virus has been confirmed in the same area. These conditions are a public nuisance in violation of Chapter 1 of Division 3 of the Health and Safety Code ("Mosquito Abatement and Vector Control Districts") and of Chapter 2 of Division 4 of Title 6 of the San Diego County Code of Regulatory Ordinances ("Vector Abatement and Control"). Mr. Slawson has shown that this nuisance must be abated to prevent or to mitigate a threat to public health.

FURTHER PROOF, by declaration, has been made this day before me by Mr. Slawson that an attempt was made on September 6, 2016 to serve a warrant directing inspection and the abatement of mosquitoes within the exterior of the above premises, and that this work could not be completed because an occupant refused to permit the lawfully authorized inspection and abatement, or because no one answered at the residence door and gates were locked.

-EXHIBIT 1.1-

YOU ARE HEREBY COMMANDED, during any daylight hours, to inspect the premises identified above, excluding the interiors of structures on the properties, to determine whether conditions conducive to mosquito breeding exist, whether mosquito breeding is occurring, and to determine to the extent feasible whether adult or larval *Aedes aegypti* mosquitoes are present. You may collect adult and larval mosquitoes for further study at Department of Environmental Health facilities as necessary to support these determinations.

YOU ARE FURTHER COMMANDED to abate any mosquito breeding that is confirmed in this area by your inspection, and to prevent further breeding, by the following means only: emptying standing water from containers, applying larvicides to standing water, and introducing mosquito fish to standing water.

YOU ARE FURTHER COMMANDED to the extent feasible to kill adult *Aedes aegypti* mosquitoes known or suspected to be present on all premises, by the following means only: dispersing Pyrenone 25-5 insecticide using calibrated ultra-low volume portable equipment.

YOU ARE FURTHER COMMANDED and to reduce the potential for future mosquito breeding at identified breeding sites by the following means only: applying Demand CS insecticide using a hand-held sprayer.

Good cause having been shown, you may perform these tasks during any daylight hours after 8 a.m., without 24 hour prior notice to the owner or occupant, and without the presence of an owner or occupant of the premises that you are inspecting or abating. You may enter any outdoor area, and may cut or defeat locks or latches and remove or relocate obstacles if necessary to achieve entry.

This Inspection and Abatement Warrant shall be effective for a period of fourteen (14) days from the date of issuance specified below.

Given under my hand, and dated this 9 day of September, 2016.

JUDGE OF THE SUPERIOR COURT

-EXHIBIT 1.2-

SUPERIOR COURT OF CALIFORNIA

COUNTY OF SAN DIEGO

In re: Occupants of Properties Area bounded by F Street on the north, Market Street on the South, Raven Street on the east and Quail Street on the west, City of San Diego.	**INSPECTION AND ABATEMENT WARRANT** Code of Civil Procedure §§ 1822.50 et seq. Health and Safety Code §§ 2040 - 2050

The people of the state of California to any Vector Control Technician, Department of Environmental Health for the County of San Diego: PROOF, by declaration, has been made this day before me by Senior Vector Ecologist Greg Slawson, that *Aedes aegypti* mosquitoes are present and breeding in the area within the City of San Diego bounded by F Street on the north, Market Street on the south, Raven Street on the east and Quail Street on the west, and that the presence of the Zika virus has been confirmed in the same area. These conditions are a public nuisance in violation of Chapter 1 of Division 3 of the Health and Safety Code ("Mosquito Abatement and Vector Control Districts") and of Chapter 2 of Division 4 of Title 6 of the San Diego County Code of Regulatory Ordinances ("Vector Abatement and Control"). Mr.Slawson has shown that this nuisance must be abated to prevent or to mitigate a threat to public health.

YOU ARE HEREBY COMMANDED, during any daylight hours, to inspect all premises located in this area, excluding the interiors of structures on the properties, to determine whether conditions conducive to mosquito breeding exist, whether mosquito breeding is occurring, and to determine to the extent feasible whether adult or larval *Aedes aegypti* mosquitoes are present. You may collect adult and larval mosquitoes for further study at Department of Environmental Health facilities as necessary to support these determinations.

– EXHIBIT 2.1 –

YOU ARE FURTHER COMMANDED to abate any mosquito breeding that is confirmed in this area by your inspection, and to prevent further breeding, by the following means only: emptying standing water from containers, applying larvicides to standing water, and introducing mosquito fish to standing water.

YOU ARE FURTHER COMMANDED to the extent feasible to kill adult *Aedes aegypti* mosquitoes known or suspected to be present on all premises, by the following means only: dispersing Pyrenone insecticide using calibrated ultra-low volume backpack equipment.

YOU ARE FURTHER COMMANDED and to reduce the potential for future mosquito breeding at identified breeding sites by the following means only: applying Demand CS insecticide using a hand-held sprayer.

Good cause having been shown, you may perform these tasks during any daylight hours, without 24 hour prior notice to the owner or occupant, and without the presence of an owner or occupant of the premises that you are inspecting or abating. You may enter any outdoor area that is not locked but may not enter any area by force.

This Inspection and Abatement Warrant shall be effective for a period of fourteen (14) days from the date of issuance specified below.

Given under my hand, and dated this

6th Day of Sept, 2016

JUDGE OF THE SUPERIOR COURT

Daniel Lambden

— EXHIBIT 2.2 —

AHFS Category: 80:08

268 3105097

Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Adsorbed

DTaP

℞ only

Tripedia®

DESCRIPTION

Tripedia®, Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Adsorbed (DTaP), for intramuscular use, is a sterile preparation of diphtheria and tetanus toxoids adsorbed, with acellular pertussis vaccine in an isotonic sodium chloride solution containing sodium phosphate to control pH. After shaking, the vaccine is a homogeneous white suspension. Tripedia vaccine is distributed by Sanofi Pasteur Inc.

Corynebacterium diphtheriae cultures are grown in a modified Mueller and Miller medium.[1] *Clostridium tetani* cultures are grown in a peptone-based medium containing a bovine extract. The meat used in this medium is US sourced. Both toxins are detoxified with formaldehyde. The detoxified materials are then separately purified by serial ammonium sulfate fractionation and diafiltration.

The acellular pertussis vaccine components are isolated from culture fluids of Phase 1 *Bordetella pertussis* grown in a modified Stainer-Scholte medium.[2] After purification by salt precipitation, ultracentrifugation, and ultrafiltration, preparations containing varying amounts of both pertussis toxin (PT) and filamentous hemagglutinin (FHA) are combined to obtain a 1:1 ratio and treated with formaldehyde to inactivate PT.

The diphtheria and tetanus toxoids are adsorbed using aluminum potassium sulfate (alum). The adsorbed toxoids are combined with acellular pertussis concentrate, and diluted to a final volume using sterile phosphate-buffered physiological saline.

Each 0.5 mL dose is formulated to contain 6.7 Lf of diphtheria toxoid and 5 Lf of tetanus toxoid (both toxoids induce at least 2 units of antitoxin per mL in the guinea pig potency test), and 46.8 µg of pertussis antigens. This is represented in the final vaccine as approximately 23.4 µg of inactivated PT and 23.4 µg of FHA. The inactivated acellular pertussis component contributes not more than 50 endotoxin units to the endotoxin content of 1 mL of DTaP. The potency of the pertussis components is evaluated by measuring the antibody response to PT and FHA in immunized mice using an ELISA system. The vaccine is formulated without preservatives, but contains a trace amount of thimerosal [(mercury derivative), (≤0.3 µg mercury/dose)] from the manufacturing process. Each 0.5 mL dose also contains, by assay, not more than 0.170 mg of aluminum and not more than 100 µg (0.02%) of residual formaldehyde. The vaccine contains gelatin and polysorbate 80 (Tween-80), which are used in the production of the pertussis concentrate.

Acellular Pertussis Vaccine Concentrates (For Further Manufacturing Use) are produced by The Research Foundation for Microbial Diseases of Osaka University (BIKEN), Osaka, Japan, under United States (US) license, and are combined with diphtheria and tetanus toxoids manufactured by Sanofi Pasteur Inc. Tripedia vaccine is filled, labeled, packaged, and released by Sanofi Pasteur Inc.

When Tripedia vaccine is used to reconstitute ActHIB® [Haemophilus b Conjugate Vaccine (Tetanus Toxoid Conjugate) manufactured by Sanofi Pasteur SA] the combination vaccine is TriHIBit®. Each single 0.5 mL dose of TriHIBit vaccine **for the fourth dose only**, is formulated to contain 6.7 Lf of diphtheria toxoid, 5 Lf of tetanus toxoid (both toxoids induce at least 2 units of antitoxin per mL in the guinea pig potency test), 46.8 µg of pertussis antigens (approximately 23.4 µg of inactivated PT and 23.4 µg of FHA), 10 µg of purified *Haemophilus influenzae* type b capsular polysaccharide conjugated to 24 µg of inactivated tetanus toxoid, and 8.5% sucrose. ***(Refer to ActHIB vaccine package insert.)***

CLINICAL PHARMACOLOGY

Simultaneous immunization of infants and children against diphtheria, tetanus, and pertussis has been a routine practice in the US since the late 1940s, and has played a major role in markedly reducing disease and deaths from these infections.[3]

Diphtheria

Corynebacterium diphtheriae may cause both localized and generalized disease. The systemic intoxication is caused by diphtheria exotoxin, an extracellular protein metabolite of toxigenic strains of *C diphtheriae*.

Both toxigenic and nontoxigenic strains of *C diphtheriae* can cause disease, but only strains that produce diphtheria toxin cause severe manifestations, such as myocarditis and neuritis.[3]

Prior to the widespread use of diphtheria toxoid in the late 1940s, diphtheria disease was common in the US. More than 200,000 cases, primarily among children, were reported in 1921. Approximately 5% to 10% of cases were fatal; the highest case-fatality rates were in the very young and the elderly. More recently, reported cases of diphtheria of all types declined from 306 in 1975 to 59 in 1979; most were cutaneous diphtheria reported from a single state. After 1979, cutaneous diphtheria was no longer reportable.[3] From 1980 through 2000, 51 cases of diphtheria were reported in the US. During the period 1980-1996, six fatal cases of diphtheria were reported. One case of diphtheria was reported each year in 1998-2000 with no fatalities.[4] Of 49 reported cases with known age since 1980, twenty-seven (55%) cases were in persons ≥20 years of age. Most cases have occurred in unimmunized or inadequately immunized persons. Although diphtheria disease is rare in the US, it appears that *C diphtheriae* continues to circulate in areas of the country with previously endemic diphtheria.[5]

- EXHIBIT 3.1 -

In the German case-control study and US open-label safety study in which 14,971 infants received Tripedia vaccine, 13 deaths in Tripedia vaccine recipients were reported. Causes of deaths included seven SIDS, and one of each of the following: enteritis, Leigh Syndrome, adrenogenital syndrome, cardiac arrest, motor vehicle accident, and accidental drowning. All of these events occurred more than two weeks post immunization.[2] The rate of SIDS observed in the German case-control study was 0.4/1,000 vaccinated infants. The rate of SIDS observed in the US open-label safety study was 0.8/1,000 vaccinated infants and the reported rate of SIDS in the US from 1985-1991 was 1.5/1,000 live births.[34] By chance alone, some cases of SIDS can be expected to follow receipt of whole-cell pertussis DTP[35] or DTaP vaccines.

Additional Adverse Reactions:

- As with other aluminum-containing vaccines, a nodule may be palpable at the injection sites for several weeks. Sterile abscess formation at the site of injection has been reported.[3,36]
- Rarely, an anaphylactic reaction (ie, hives, swelling of the mouth, difficulty breathing, hypotension, or shock) has been reported after receiving preparations containing diphtheria, tetanus, and/or pertussis antigens.[3]
- Arthus-type hypersensitivity reactions, characterized by severe local reactions (generally starting 2-8 hours after an injection), may follow receipt of tetanus toxoid.
- A few cases of peripheral mononeuropathy and of cranial mononeuropathy have been reported following tetanus toxoid administration, although available evidence is inadequate to accept or reject a causal relation.[37]
- A review by the Institute of Medicine (IOM) found evidence for a causal relationship between tetanus toxoid and both brachial neuritis and Guillain-Barré syndrome.[37]
- A few cases of demyelinating diseases of the CNS have been reported following some tetanus toxoid-containing vaccines or tetanus and diphtheria toxoid-containing vaccines, although the IOM concluded that the evidence was inadequate to accept or reject a causal relationship.[37]

Adverse events reported during post-approval use of Tripedia vaccine include idiopathic thrombocytopenic purpura, SIDS, anaphylactic reaction, cellulitis, autism, convulsion/grand mal convulsion, encephalopathy, hypotonia, neuropathy, somnolence and apnea. Events were included in this list because of the seriousness or frequency of reporting. Because these events are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequencies or to establish a causal relationship to components of Tripedia vaccine.[2]

Reporting of Adverse Events

The National Vaccine Injury Compensation Program, established by the National Childhood Vaccine Injury Act of 1986, requires physicians and other health-care providers who administer vaccines to maintain permanent vaccination records of the manufacturer and lot number of the vaccine administered in the vaccine recipient's permanent medical record along with the date of administration of the vaccine and the name, address and title of the person administering the vaccine. The Act (or statute) further requires the health-care professional to report to the Secretary of the US Department of Health and Human Services, the occurrence following immunization of any events set forth in the statute or the Vaccine Injury Table, including anaphylaxis or anaphylactic shock within 7 days; encephalopathy or encephalitis within 7 days, brachial neuritis within 28 days; or an acute complication or sequelae (including death) of an illness, disability, injury, or condition referred to above, or any events that would contraindicate further doses of vaccine, according to this Tripedia vaccine package insert.[38,39]

Reporting by parents or guardians of all adverse events after vaccine administration should be encouraged. Adverse events following immunization with vaccines should be reported by health-care providers to Vaccine Adverse Event Reporting System (VAERS). Reporting forms and information about reporting requirements or completion of the form can be obtained from VAERS through a toll-free number 1-800-822-7967.[38,39]

Health-care providers also should report these events to the Pharmacovigilance Department, Sanofi Pasteur Inc., Discovery Drive, Swiftwater, PA 18370 or call 1-800-822-2463.

DOSAGE AND ADMINISTRATION

Parenteral drug products should be inspected visually for extraneous particulate matter and/or discoloration prior to administration whenever solution and container permit. If these conditions exist, the vaccine should not be administered.

SHAKE VIAL WELL *before withdrawing each dose*. After shaking, the vaccine is a homogeneous white suspension. Inject 0.5 mL of Tripedia vaccine intramuscularly only. The preferred injection sites are the anterolateral aspect of the thigh and the deltoid muscle of the upper arm. The vaccine should not be injected into the gluteal area or areas where there may be a major nerve trunk.

Before injection, the skin over the site to be injected should be cleansed with a suitable germicide. After insertion of the needle, aspirate to ensure that the needle has not entered a blood vessel.

Fractional doses (doses <0.5 mL) should not be given. The effect of fractional doses on the frequency of serious adverse events and on efficacy has not been determined.

Do NOT administer this product intravenously or subcutaneously.

Immunization Series

A 0.5 mL dose of Tripedia vaccine is approved for administration to infants and children 6 weeks to 7 years of age (prior to seventh birthday) as a five-dose series. The series consists of a primary immunization course of three doses administered at 2, 4, and 6 months of age, followed by two booster doses, recommended at 15 to 18 months of age, and at 4 to 6 years of age, respectively.[15] The customary age for the first dose is 2 months of age, but it may be given as early as 6 weeks of age. The recommended interval between the first three doses is 8 weeks, with a minimum interval of 4 weeks.[14] The recommended interval between the third and fourth dose is 6-12 months.[15] The fifth dose is recommended before entry into kindergarten or elementary school, and is not needed if the fourth dose was given after the fourth birthday.[15]

- EXHIBIT 3.2 -

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Science News *from research organizations*

New doubts on Zika as cause of microcephaly

Date: June 24, 2016

Source: New England Complex Systems Institute

Summary: Brazil's microcephaly epidemic continues to pose a mystery -- if Zika is the culprit, why are there no similar epidemics in other countries also hit hard by the virus? In Brazil, the microcephaly rate soared with more than 1,500 confirmed cases. But in Colombia, a recent study of nearly 12,000 pregnant women infected with Zika found zero microcephaly cases. If Zika is to blame for microcephaly, where are the missing cases?

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FULL STORY

Brazil's microcephaly epidemic continues to pose a mystery -- if Zika is the culprit, why are there no similar epidemics in other countries also hit hard by the virus? In Brazil, the microcephaly rate soared with more than 1,500 confirmed cases. But in Colombia, a recent study of nearly 12,000 pregnant women infected with Zika found zero microcephaly cases. If Zika is to blame for microcephaly, where are the missing cases? Perhaps there is another reason for the epidemic in Brazil. According to a new report by the New England Complex Systems Institute (NECSI), the number of missing cases in Colombia and elsewhere raises serious questions about the assumed connection between Zika and microcephaly.

Recently, the *New England Journal of Medicine* published the preliminary results of a large study of pregnant Colombian women infected with Zika. Of the nearly 12,000 pregnant women with clinical symptoms of Zika infections until March 28, no cases of microcephaly were reported as of May 2. At the same time, four cases of Zika and microcephaly were reported for women who were symptomless for Zika infections and therefore not included in the study itself.

Is it possible that more time is needed for births to give rise to the high numbers seen in Brazil? The numbers don't add up according to the NECSI report. The Zika and microcephaly cases that are not part of the study show that there are many more pregnancies affected by Zika without symptoms. Because there are four cases

-EXHIBIT 4-

WIKI-VERSION FROM 11/21/2009

Zika virus

From Wikipedia, the free encyclopedia

Zika virus (ZIKV) is a member of the Flaviviridae virus family and the flavivirus genus. It is related to dengue, yellow fever, West Nile and Japanese encephalitis, viruses that are also members of the virus family Flaviviridae. Along with other viruses in this family, Zika virus is enveloped and icosahedral with a non-segmented, +ssRNA genome. It is most closely related to the Spondweni virus, and is one of the two viruses in the Spondweni virus clade.[1] The virus was first isolated in 1947 from a rhesus monkey in the Zika Forest of Uganda, Africa, and was isolated for the first time from humans in 1968 in Nigeria.[2] From 1951 through 1981, evidence of human infection was reported from other African countries such as Uganda, Tanzania, Egypt, Central African Republic, Sierra Leone, and Gabon, as well as in parts of Asia including India, Malaysia, the Philippines, Thailand, Vietnam, and Indonesia.[2] It is transmitted by mosquitoes, and has been isolated in Ae. africanus, Ae. apicoargenteus, Ae. luteocephalus, Ae. aegypti, Ae vitattus, and Ae. furcifer, all members of the Aedes mosquito family. Studies show that the extrinsic incubation period in mosquitoes is about 10 days.[2] The vertebrate hosts of the virus include monkeys and humans.

Zika virus	
Virus classification	
Group:	Group IV ((+)ssRNA)
Family:	*Flaviviridae*
Genus:	*Flavivirus*
Species:	***Zika virus***

The pathogenesis of the virus is hypothesized to first infect dendritic cells near the site of inoculation, and then spread to lymph nodes and the bloodstream.[1] In terms of replication, flaviviruses generally replicate in the cytoplasm, but Zika virus antigens have been found in infected cell nuclei. Common symptoms of infection with the virus include mild headaches, maculopapular rash, fever, malaise, conjunctivitis, and arthralgia. The first well documented case of Zika virus was in 1964, beginning with a mild headache and progressing to a maculopapular rash, fever, and back pain.[2] Within 2 days, the rash was fading, and within 3 days, the fever was gone and only the rash remained.[2] There is no vaccine or preventive drug for Zika virus, and only treatment of symptoms is possible. Usually non-steroid anti-inflammatories and/or non-salicylic analgetics are used.

The first outbreak of the disease outside of Africa and Asia was in April 2007, on Yap Island of the Federated States of Micronesia. This virus was characterized by rash, conjunctivitis, and arthralgia, and was initially thought to be dengue. The Chikungunya and Ross River viruses were also suspected.[3] However, serum samples from patients in the acute phase of illness contained RNA of Zika virus. The virus was relatively mild, as there were 49 confirmed cases, 59 uncomfirmed cases, no deaths and no hospitalizations.[4]

Zika virus could be considered an emerging pathogen, as it spread outside Africa and Asia for the first time in 2007.[2] Thus far, it has been a relatively mild disease with limited scope, but its true potential as a virus and as an agent of disease is currently unknown.

-EXHIBIT 5-

See also

- Zika fever

References

Zika virus

[**zee**-k*uh* vahy-r*uh* s]

noun

1. a chiefly mosquito-borne virus of the genus *Flavivirus* that causes Zika, a mild illness.

2. the illness itself, typically characterized by mild fever, rash, and joint pain; Zika.

— EXHIBIT 6.1 —

Zika virus | Article about Zika virus by The Free Dictionary

http://encyclopedia2.thefreedictionary.com/Zika+virus

Zika virus

Also found in: **Medical**.

VERSION: 9/8/2016

Zika virus (zē'kə), single-stranded RNA virus of the genus flavivirus that infects human and primates and causes a disease known as Zika fever or zika. It is transmitted by the bite of a female *Aedes* mosquito. The virus was first isolated from a rhesus monkey from Uganda's Zika Forest in 1947, and was first found in humans in Nigeria in 1954. The symptoms of Zika fever typically include a low-grade fever accompanied by a rash, joint pain, or conjunctivitis; there also may be muscle pain, swelling of the joints in the hands or feet, headache, pain behind the eyes, and vomiting. In most cases there are no severe complications and the infected individual recovers fully. Roughly three fourths of the people infected with the virus show no symptoms, and Zika fever is often misdiagnosed **dengue fever** in areas where dengue fever is common because of similar symptoms. There is no vaccine or treatment for the virus, other than alleviating the symptoms of infection. Like other mosquito-borne infections, prevention focuses on controlling the mosquitoes that spread the virus and avoiding being bitten.

Outbreaks of the disease initially occurred in tropical Africa and SE Asia, but in 2007 there was an outbreak in the Pacific, on Yap island in the Federated States of Micronesia. In 2013 an outbreak occurred in French Polynesia and the disease then spread to other parts of the Pacific. The virus has also been identified since 2015 in a number of South and Central American countries, Mexico, and parts of the Caribbean. An outbreak of Zika fever that occurred in Brazil beginning in 2015 is suspected of being linked to a sharp increase in the occurrence of microcephaly, a birth defect characterized by an unusually small head and brain damage.

– EXHIBIT 6.2 –

WIKI-VERSION 9/8/2016

Zika virus

From Wikipedia, the free encyclopedia

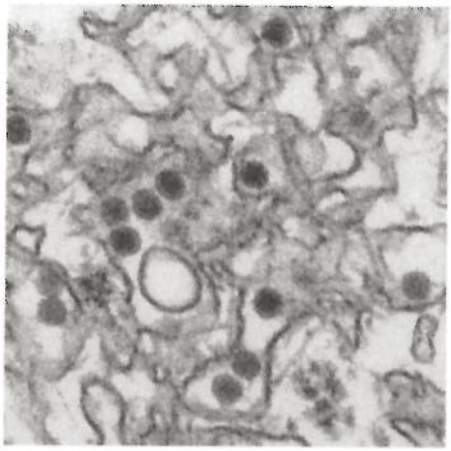
Zika virus (ZIKV) is a member of the virus family *Flaviviridae* and the genus *Flavivirus*.[3] It is spread by daytime-active *Aedes* mosquitoes, such as *A. aegypti* and *A. albopictus*.[3] Its name comes from the Zika Forest of Uganda, where the virus was first isolated in 1947.[4] Zika virus is related to the dengue, yellow fever, Japanese encephalitis, and West Nile viruses.[4] Since the 1950s, it has been known to occur within a narrow equatorial belt from Africa to Asia. From 2007 to 2016, the virus spread eastward, across the Pacific Ocean to the Americas, leading to the 2015–16 Zika virus epidemic.

The infection, known as Zika fever or Zika virus disease, often causes no or only mild symptoms, similar to a very mild form of dengue fever.[3] While there is no specific treatment, paracetamol (acetaminophen) and rest may help with the symptoms.[5] As of 2016, the illness cannot be prevented by medications or vaccines.[5] Zika can also spread from a pregnant woman to her fetus. This can result in microcephaly, severe brain malformations, and other birth defects.[6][7] Zika infections in adults may result rarely in Guillain–Barré syndrome.[8]

In January 2016, the United States Centers for Disease Control and Prevention (CDC) issued travel guidance on affected countries, including the use of enhanced precautions, and guidelines for pregnant women including considering postponing travel.[9][10] Other governments or health agencies also issued similar travel warnings,[11][12][13] while Colombia, the Dominican Republic, Puerto Rico, Ecuador, El Salvador, and Jamaica advised women to postpone getting pregnant until more is known about the risks.[12][14] Zika is pronounced /ˈziːkə/ or /ˈzɪkə/.[15][16]

Contents

Zika virus



Electron micrograph of the virus. Virus particles (digitally colored purple) are 40 nm in diameter, with an outer envelope and a dense inner core.[1]

Zika virus envelope model, colored by chains, PDB entry 5ire (http://www.pdbe.org/5ire).[2]

Virus classification

Group:	Group IV ((+)ssRNA)
Family:	*Flaviviridae*
Genus:	*Flavivirus*
Species:	*Zika virus*

-EXHIBIT 7.1-

Help

Zika virus: Revision history

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(cur) = difference from current version, (prev) = difference from preceding version,
m = minor edit, → = section edit, ← = automatic edit summary
(newest | oldest) View (newer 100 | older 100) (20 | 50 | 100 | 250 | 500)

Compare selected revisions

- (cur | prev) ◉ 20:01, 8 September 2016 ClueBot NG (talk | contribs) m . . (64,185 bytes) (-8) . . (Reverting possible vandalism by 204.83.240.144 to version by BigDwiki. Report False Positive? Thanks, ClueBot NG. (2751876) (Bot)) (undo)
- (cur | prev) ◉ 20:00, 8 September 2016 204.83.240.144 (talk) . . (64,193 bytes) (+8) . . (Stuff) (undo) *(Tags: Mobile edit, Mobile web edit)*
- (cur | prev) ◉ 21:03, 7 September 2016 BigDwiki (talk | contribs) m . . (64,185 bytes) (-33) . . (Reverted edits by 49.145.196.200 (talk): Introduces factual errors (HG) (3.1.21)) (undo)
- (cur | prev) ◉ 21:03, 7 September 2016 49.145.196.200 (talk) . . (64,218 bytes) (+33) . . (undo)
- (cur | prev) ◉ 21:01, 7 September 2016 BigDwiki (talk | contribs) m . . (64,185 bytes) (0) . . (Reverted edits by 49.145.196.200 (talk) (HG) (3.1.21)) (undo)
- (cur | prev) ◉ 21:00, 7 September 2016 49.145.196.200 (talk) . . (64,185 bytes) (0) . . (undo)
- (cur | prev) ◉ 00:30, 7 September 2016 Sfarney (talk | contribs) . . (64,185 bytes) (-10) . . (→Transmission: Copyedit. Do we "incriminate" viruses now?? Heh. Will fix in time.) (undo) *(Tag: Visual edit)*
- (cur | prev) ◉ 19:33, 6 September 2016 MeowMoon (talk | contribs) . . (64,195 bytes) **(+1,287)** . . (Reverted 1 edit by 77.101.134.107 (talk) to last revision by ClueBot NG. (TW)) (undo)
- (cur | prev) ◉ 19:30, 6 September 2016 77.101.134.107 (talk) . . (62,908 bytes) **(-1,287)** . . (→Virology) (undo) *(Tags: nonsense characters, repeating characters)*
- (cur | prev) ◉ 19:29, 6 September 2016 ClueBot NG (talk | contribs) m . . (64,195 bytes) (-38) . . (Reverting possible vandalism by 77.101.134.107 to version by Jytdog. Report False Positive? Thanks, ClueBot NG. (2749249) (Bot)) (undo)
- (cur | prev) ◉ 19:29, 6 September 2016 77.101.134.107 (talk) . . (64,233 bytes) (+38) . . (→Virology: ddddddddddddd) (undo) *(Tag: repeating characters)*
- (cur | prev) ◉ 15:53, 6 September 2016 Jytdog (talk | contribs) . . (64,195 bytes) **(-1,111)** . . (→Mosquito: that content is about preventing Zika fever; moving there) (undo)
- (cur | prev) ◉ 15:07, 6 September 2016 194.80.229.244 (talk) . . (65,306 bytes) **(+1,111)** . . (undo)
- (cur | prev) ◉ 13:27, 6 September 2016 NgYShung (talk | contribs) m . . (64,195 bytes) (-3) . . (Reverted edits by 81.83.10.33 (talk) (HG) (3.1.21)) (undo)

-EXHIBIT 7.2-

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- (cur | prev) 03:25, 6 September 2016 JimVC3 (talk | contribs) . . (64,195 bytes) (+95) . . (Reverted 2 edits by 116.87.223.76 (talk) to last revision by 71.47.116.12. (TW)) (undo)
- (cur | prev) 03:24, 6 September 2016 116.87.223.76 (talk) . . (64,100 bytes) (-100) . . (→Transmission) (undo)
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- (cur | prev) 21:57, 5 September 2016 Julietdeltalima (talk | contribs) . . (64,191 bytes) (-1) . . (Reverted good faith edits by 77.217.208.54: Rolling back introduced typographical error; "Americas" is the correct word from the title of the referenced article, not "Americans". (TW)) (undo)
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- (cur | prev) 08:55, 5 September 2016 121.97.26.83 (talk) . . (64,188 bytes) (-3) . . (→Virology) (undo)
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- (cur | prev) 04:11, 2 September 2016 Me, Myself, and I are Here (talk | contribs) . . (63,998 bytes) (+1) . . (Reverted 1 edit by 115.42.150.66 (talk): Fix heading. (TW)) (undo)
- (cur | prev) 02:16, 2 September 2016 115.42.150.66 (talk) . . (63,997 bytes) (-1) . . (→Zika fever) (undo)
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- (cur | prev) 20:36, 1 September 2016 Jytdog (talk | contribs) . . (64,001 bytes) (-133) . . (remove NYT cite; we don't use popular media for health claims) (undo)
- (cur | prev) 18:19, 1 September 2016 204.26.35.49 (talk) . . (64,134 bytes) (+3) . . (undo)
- (cur | prev) 17:09, 1 September 2016 BatteryIncluded (talk | contribs) m . . (64,131 bytes) (+60) . . (Reverted edits by 63.149.167.3 (talk) to last version by Doc James) (undo)
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- (cur | prev) 13:39, 1 September 2016 2605:6000:f090:b8f0:9c8b:8eec:1de1:5f33 (talk) . . (64,177 bytes) (+207) . . (→External links) (undo)
- (cur | prev) 03:21, 1 September 2016 Jytdog (talk | contribs) . . (63,970 bytes) (+8) . . (Undid revision 737162433 by Reatlas (talk) please no) (undo)
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- (cur | prev) 20:36, 31 August 2016 Gorthian (talk | contribs) . . (63,970 bytes) **(-989)** . . (Reverted to revision 736815394 by Soupvector: This is not the place to add info about the current epidemic; try 2015–16

-EXHIBIT 7.3-

Material Safety Data Sheet

PYRENONE® 25-5 PUBLIC HEALTH INSECTICIDE

MSDS Number: 102000004841
MSDS Version 3.1
Revision Date: 07/09/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name	PYRENONE® 25-5 PUBLIC HEALTH INSECTICIDE
MSDS Number	102000004841
EPA Registration No.	432-1050

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-800-331-2867

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview	Caution! Harmful by inhalation and if swallowed. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling. Keep away from domestic animals.
Physical State	liquid
Odor	mild
Appearance	amber
Exposure routes	Ingestion, Inhalation, Eye contact, Skin contact
Immediate Effects	
Eye	May cause slight irritation. Avoid contact with eyes.
Skin	May cause slight irritation. Avoid contact with skin and clothing.
Ingestion	Harmful if swallowed. Do not take internally.
Inhalation	Harmful if inhaled. Avoid breathing spray mist.
Chronic or Delayed Long-Term	This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic). This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.
Potential Environmental Effect	Highly toxic to fish.

-EXHIBIT 8.1-

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Pyrethrins including cinerins	8003-34-7	5.00
Piperonyl butoxide	51-03-6	25.00
Distillates (petroleum), hydrotreated light	64742-47-8	15.00

SECTION 4. FIRST AID MEASURES

General
When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Skin
Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation
Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Notes to physician

Signs and Symptoms
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
If large amounts are ingested, the following symptoms may occur:
Dizziness
Lack of coordination
Tremors
Unconsciousness

Hazards
Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.

Treatment
Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point
137.8 °C / 280.0 °F
Test type: Tag closed cup

- EXHIBIT 8.2-

Chemical Stability Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have not been performed on this formulation. Acute data provided is from a similar formulation containing 3.93 and 32.26% of the active ingredients, pyrethrin and piperonyl butoxide, respectively. The non-acute information pertains to the technical-grade active ingredients.

Acute oral toxicity male/female combined rat: LD50: > 5,000 mg/kg

Acute dermal toxicity male/female combined rabbit: LD50: > 5,000 mg/kg

Acute inhalation toxicity male/female combined rat: LC50: > 4.9 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.

male/female combined rat: LC50: > 19.6 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.

Skin irritation rabbit: slight irritation

Eye irritation rabbit: slight irritation

Sensitisation guinea pig: Sensitising

Chronic toxicity Pyrethrin caused effects in the liver, lung, thyroid and/or nervous system in chronic studies in mice, rats and dogs.

Piperonyl butoxide caused decreased body weights and/or increased organ weights (liver, kidney, adrenal) in chronic studies in rats and dogs.

Assessment Carcinogenicity

Pyrethrin is classified by EPA as "Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential" based on the occurrence of benign liver tumors only in female rats. Therefore, an assessment of cancer risk to humans from potential exposure to pyrethrins is not required.

Piperonyl butoxide gave no evidence of a carcinogenic potential in a lifetime feeding study in rats. In an oncogenicity study in mice, piperonyl butoxide caused an increased incidence of liver tumors. The US EPA has categorized piperonyl butoxide as a group C carcinogen, possible human carcinogen, based on limited evidence of cancer in laboratory animals.

ACGIH

Pyrethrins including cinerins	8003-34-7	Group A4

NTP
None.
IARC

– EXHIBIT 8.3 –

Safety Data Sheet

DEMAND® CS Insecticide

Date: 6/12/2015
Replaces: 1/28/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **DEMAND® CS Insecticide**
Product No.: A12690A
Use: Insecticide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications:
Inhalation: Category 4
Skin Sensitizer: Category 1B
Specific Target Organ Toxicity: Repeated Category 2
Specific Target Organ Toxicity: Drowsiness Category 3
Specific Target Organ Toxicity: Respiratory Irritation Category 3

Signal Word (OSHA): Warning

Hazard Statements:
May cause an allergic skin reaction
Harmful if inhaled
May cause respiratory irritation
May cause drowsiness or dizziness
May cause damage to organs

Hazard Symbols:

Precautionary Statements:
Do not breathe mist, vapors, spray.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves, protective clothing, eye protection.
If on skin: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison center, doctor or Syngenta if you feel unwell.
See Section 4 First Aid Measures.
Wash contaminated clothing before reuse.

-EXHIBIT 8.4-

Lambda-Cyhalothrin : No treatment-related tumors in rats or mice.

Chemical Name	NTP/IARC/OSHA Carcinogen
Xylene	IARC Group 3
1,2,4-Trimethylbenzene	No
Cumene	No
1,2-Propanediol	No
Petroleum Solvent	No
Other ingredients	No
[1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate	No

Other Toxicity Information

In humans, contact with exposed skin may result in temporary itching, tingling, burning or numbness, called paresthesia. The effect may result from splash, aerosol, or hot vapor contact, or transfer to the face from contaminated gloves and hands. The symptoms normally disappear within 24 hours. Face and genital areas are especially susceptible to this effect. Paresthesia involving the face is also known as "subjective facial sensation" or SFS.

Toxicity of Other Components

1,2,4-Trimethylbenzene

Inhalation of 1,2,4-trimethylbenzene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma. Effects of chronic exposure to this solvent can include blood disorders (anemia, leukopenia) and kidney or liver damage.

Cumene

Exposure to cumene vapors may cause irritation to eyes, skin, and respiratory tract. Cumene may also cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects. Prolonged exposure to high concentrations (>100 PPM) may result in liver, kidney or lung damage.

Other ingredients

Not Applicable

Petroleum Solvent

The supplier reports that high vapor/aerosol concentrations (> 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects.

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Xylene

Inhalation of xylene at high concentrations can cause central nervous system depression, respiratory tract irritation, asphyxiation, cardiac stress and coma.

Target Organs

Active Ingredients

Lambda-Cyhalothrin :	Liver, nervous system

Inert Ingredients

1,2,4-Trimethylbenzene:	CNS, liver, kidney, blood, respiratory tract, skin, eye
Cumene:	Skin, eye, liver, respiratory tract, kidney, CNS
Other ingredients:	Not Applicable
Petroleum Solvent:	Eye, respiratory tract, CNS

-EXHIBIT 8.5-

The Rio Times
News in English for Rio de Janeiro and Brazil

Brazil Shown to Be Largest Global Consumer of Pesticides

By Lise Alves on May 5, 2015

The use of agro-chemicals in Brazil grew by more than 162 percent from 2000 to 2012.

By Lise Alves, Senior Contributing Reporter

SÃO PAULO, BRAZIL – The use of pesticides in Brazil grew by more than 162 percent from 2000 to 2012, according to the latest report by the Brazilian Association of Collective Health (ABRASCO), making the country the number one consumer of pesticides in the world. According to the entity, the Brazilian agriculture sector purchased more than 823,000 tons of pesticides in 2012.

"Since 2009 Brazil has taken over as the largest global consumer of agro-chemicals," Paulo Petersen, director of the Brazilian Agro-Ecology Association (ABA), told Agencia Brasil news agency. "The consumption would equal 5.5 kilos per person per year," he added.

The ABRASCO report, titled "An Alert of the Impacts of Pesticides on Health", was released last week in Rio de Janeiro. The report includes scientific studies including data from the National Cancer Institute that

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- EXHIBIT 9.1 -

- EXHIBIT 9.1 -

The Rio Times Article Text

Brazil Shown to Be Largest Global Consumer of Pesticides

http://riotimesonline.com/brazil-news/rio-politics/brazil-is-largest-global-consumer-of-pesticides-shows-report/#

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Brazil has become the largest consumer of pesticides in the world, photo courtesy of Agencia Brasil archives. "Since 2009 Brazil has taken over as the largest global consumer of agro-chemicals," Paulo Petersen, director of the Brazilian Agro-Ecology Association (ABA), told Agencia Brasil news agency. "The consumption would equal 5.5 kilos per person per year," he added.

The ABRASCO report, titled "An Alert of the Impacts of Pesticides on Health", was released last week in Rio de Janeiro. The report includes scientific studies including data from the National Cancer Institute that shows a direct link between the use of pesticides and health problems.

According to APaulo Petersen the increase in the use of agro-chemicals is related to the expansion of mono-cultures of crops and genetically modified crops (GM).

The ABA director says that when genetically modified seeds were launched those in favor of using these seeds and crops argued that their use would lead to lower usage of pesticides because these plants would be more resistant to disease and pests.

Petersen argues that what has been seen in reality is the opposite. "Not only are we using more [pesticides] but we are using more powerful, stronger pesticides. We have been forced to import pesticides which were not even allowed in Brazil to combat pests which attacked GM soybean and cotton plants," he is quoted as saying.

The executive adds that 22 of the fifty main active ingredients used in pesticides in Brazil today have been banned in most other countries. "We are facing a situation of total lack of control [of pesticide use]. The state does not monitor as it should and the legislation for the use of pesticides is not being obeyed," he concludes.

-EXHIBIT 9.2-

"You may choose to look the other way, but you can never say again that you did not know."
— William Wilberforce

SCHEDULES

Text size:

Tdap Vaccinations for All Pregnant Women in Brazil Mandated in Late 2014

by Marco Cáceres

Published February 1, 2016 | Vaccination, Schedules

In October 2014, the Brazilian Ministry of Health's Epidemiological Surveillance Center "Prof. Alexandre Vranjac" (CVE) in São Paulo, Brazil published a "technical report" on the diphtheria, tetanus and pertussis vaccine (Tdap). In that report, the CVE stated that the Tdap vaccine would be included in Brazil's National Vaccination Schedule for pregnant women.

> *Considering the epidemiological situation of the [pertussis] disease and the need to protect the mother-child pair, the Tdap vaccine will be incorporated into the National Vaccination Schedule for pregnant women and health professionals (anesthesiologist, gynecologist, obstetrician, neonatologist, pediatrician, nurse, and nursing technician) who care for newborns in maternity wards and nurseries/neonatal ICUs.*

"[Brazil] will recommend Tdap in the routine immunization programme for pregnant women from 2014 onward." — *World Health Organization*

A retrospective study published in the journal *BMC Infectious Diseases* in 2015 highlights the growing incidence of pertussis (whooping cough) in Brazil from 2007 to 2014. Using data obtained from case notification forms, the study identified a total of 80,068 "suspected cases" of pertussis in Brazil during that seven-year period. Another study published in *Autopsy Case Reports* last year cited the increasing number of deaths from pertussis in Brazil in recent years, particularly in 2013.

> *In 2013, 109 pertussis-related deaths were reported—a number 7-fold higher than the average number of deaths reported annually in the period from 2001 to 2010. More than 80% of the deaths occurred in infants younger than 3 months of age.*

It is understandable that the Brazilian government was concerned about the upward trend in pertussis infections. By the end of 2014, following the October report from the CVE, the Brazilian Ministry of Health announced the introduction of the Tdap vaccine for all pregnant women in the country, and the Brazilian National Immunization Program (NIP) had begun the vaccinations.

(In 2011, with little evidence proving safety, the CDC instituted a similar universal use Tdap vaccine policy for all pregnant women in the U.S. in an attempt to control pertussis infections)

The policy change to vaccinating pregnant women with Tdap to try to control pertussis infections in Brazil had been expected for many months. Earlier in 2014, at a meeting of the World Health Organization's (WHO) Strategic Advisory Group of Experts (SAGE), the group had written in a background paper...

> *[Brazil] will recommend Tdap in the routine immunization programme for pregnant women from 2014 onward.*.

The CVE report recommended the Tdap vaccine be given to women between the 27th week and 36th week of their pregnancy, and that it could also be administered up to 20 days prior to the expected date of birth. The report specified the Tdap produced by GlaxoSmithKline (GSK) of the United Kingdom as the one to be used. GSK has a technology transfer agreement with Brazil's Butantan Institute for the production of the Tdap vaccine in Brazil.

The CVE report listed the following ingredients in the GSK/Butantan Institute Tdap vaccine:

- Diphtheria toxoid—not less than 2 International Units (IU)
- Tetanus toxoid—not less than 20 International Units (IU)

- EXHIBIT 10.1 -

- *Bordetella pertussis* antigen
- Pertussis toxoid—8 mcg
- Filamentous haemagglutinin—8 mcg
- Pertactin—2.5 mcg
- Adsorbed hydrated aluminum hydroxide (Al (OH) 3) and aluminum phosphate (AlPO4)
- Excipients: aluminum hydroxide , aluminum phosphate , sodium chloride and water for injection. Contains formaldehyde residues, polysorbate 80 and glycine.

GSK's Tdap product is internationally known under the brand name Refortrix® or, more commonly, Boostrix®), and it has been licensed in Brazil for more than a decade. In addition to the ingredients listed above for Boostrix, the following growth medium and process ingredients are used in manufacturing the vaccine:

- modified Latham medium derived from bovine casein
- Fenton medium containing bovine extract
- formaldehyde
- Stainer-Scholte liquid medium
- glutaraldehyde
- aluminum hydroxide.

According to GSK, neither the safety nor effectiveness of Boostrix have been established in pregnant women. The package insert for Boostrix reads:

> *A developmental toxicity study has been performed in female rats at a dose approximately 40 times the human dose (on a mL/kg basis) and revealed no evidence of harm to the fetus due to BOOSTRIX. Animal fertility studies have not been conducted with BOOSTRIX. There are no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, BOOSTRIX should be given to a pregnant woman only if clearly needed.*

Despite this cautionary information, the Brazilian government has been vaccinating tens of thousands, if not hundreds of thousands, of pregnant women in its country during the past year. A large portion of these pregnancies are occurring in Brazil's northeastern region, notably in the state of Pernambuco—the country's fastest growing population center.

References:

< Previous Post Next Post >

-EXHIBIT 10.2-

The Centers for Disease Control and Prevention, the Environmental Protection Agency, and anyone concerned with mosquito control in general, or Zika in particular, have a big problem: Standard mosquito control measures are failing. Mosquitoes are developing resistance to common pesticides, and people are increasingly wary of the chemicals being used to replace them.

In Florida, for example, residents are calling for a two-week moratorium on aerial spraying of the insecticide Naled over Miami Beach, even as the number of locally acquired Zika infections tops 70. Protesters are urging officials to consider other options, but the CDC and others say

-EXHIBIT 11.1-

that effective alternatives are in short supply.

As the crisis persists, scientists are turning to an unlikely ally: other mosquitoes. Some researchers are developing genetically modified (GM) mosquitoes that can decimate wild populations by interfering with the mosquitoes' ability to reproduce. Others are infecting mosquitoes with a bacteria that inhibits Zika transmission or releasing into the wild a cannibalistic species that devours the disease-carrying ones.

Each of those options holds promise, but each also comes with safety concerns and regulatory challenges. Here's a quick primer on the non-chemical options for battling the disease-carrying Aedes mosquito:

Alter Their Genes

There are several ways to turn a mosquito's genome against itself, but the technology that's furthest along comes from the British company Oxitec. The company has conducted five field trials of its GM mosquitoes—in Brazil, Panama, and the Cayman Islands—and its insects are actively being used in the Cayman Islands and in Piracicaba, Brazil, a city of 60,000 people.

In the U.S., the Food and Drug Administration has approved a field test of Oxitec mosquitoes in Key Haven, Fla., but that trial can't proceed until the Florida

-EXHIBIT 11.2-

THE ECOLOGIST

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Argentine and Brazilian doctors suspect mosquito insecticide as cause of microcephaly

Claire Robinson / GMWatch

10th February 2016

With the proposed connection between the Zika virus and Brazil's outbreak of micr new born babies looking increasingly tenuous, Latin American doctors are proposi possible cause: Pyriproxyfen, a pesticide used in Brazil since 2014 to arrest the development of mosquito larvae in drinking water tan 'cure' in fact be the poison?

Malformations detected in thousands of children from pregnant women living in areas where the Brazilian state added Pyriproxyfen to drinking water are not a coincidence, even though the Ministry of Health places direct blame on the Zika virus.

The World Health Organization view that the microcephaly outbreak in Brazil's impoverished caused by the Zika virus has, so far, received few challenges.

Brazil's Health Minister, Marcelo Castro, has gone so far as to say that he has *"100% certaint* is a link between Zika and microcephaly, a birth defect in which babies are born with small h

The view is widely supported in the medical community worldwide, including by the US's influ for Disease Control. But there is no hard evidence of the link, rather a mixture of epidemiolo indications and circumstantial evidence.

One of the key scientific papers, by A S Oliveira Melo et al in the journal *Ultrasound in Obstet Gynecology*, found Zika virus in the amniotic fluids and other tissues of the affected babies a mothers. But only two women were examined, far too small a number to establish a statistic significant link.

The *New York Times* also reported on 3rd February on the outcome of analyses by Brazil's He Ministry: *"Of the cases examined so far, 404 have been confirmed as having microcephaly. C them tested positive for the Zika virus. But the government and many researchers say that r be largely irrelevant, because their tests would find the presence of the virus in only a tiny p cases."*

And last weekend, the most powerful indicator yet that the microcephaly may have another c altogether was announced by Colombia's president, Juan Manuel Santos, as reported by the *Washington Post*. Colom health officials, stated Santos, have so far diagnosed 3,177 pregnant women with the Zika virus- but in no case had been observed in the foetus.

Argentine doctors: it's the insecticide

Now a new report has been published by the Argentine doctors' organisation, Physicians in the Crop-Sprayed Towns which not only challenges the theory that the Zika virus epidemic in Brazil is the cause of the increase in microcephal newborns, but proposes an alternative explanation.

According to PCST, the Ministry failed to recognise that in the area where most sick people live, a chemical larvicide l malformations in mosquitoes was introduced into the drinking water supply in 2014.

STOP PRESS *- Brazilian state Rio Grande do Sul bans Pyriproxyfen for use in controlling Zika virus mosquitos.*

This pesticide, Pyriproxyfen, is used in a state-controlled programme aimed at eradicating disease-carrying mosquito Physicians added that the Pyriproxyfen is manufactured by Sumitomo Chemical, a Japanese 'strategic partner' of Mor company they have learned to distrust due to the vast volume of the company's pesticides sprayed onto Argentina's

Pyriproxyfen is a growth inhibitor of mosquito larvae, which alters the development process from larva to pupa to ad generating malformations in developing mosquitoes and killing or disabling them. It acts as an insect juvenile hormo juvenoid, and has the effect of inhibiting the development of adult insect characteristics (for example, wings and mat genitalia) and reproductive development.

The chemical has a relatively low risk profile as shown by its WHO listing, with low acute toxicity. Tests carried out in animals by Sumitomo found that it was not a teratogen (did not cause birth defects) in the mammals it was tested o this cannot be taken as a completely reliable indicator of its effects in humans - especially in the face of opposing evi

The PCST commented: *"Malformations detected in thousands of children from pregnant women living in areas where state added Pyriproxyfen to drinking water are not a coincidence, even though the Ministry of Health places a direct l Zika virus for this damage."*

They also noted that Zika has traditionally been held to be a relatively benign disease that has never before been ass birth defects, even in areas where it infects 75% of the population.

Brazilian doctors also suspect pyriproxyfen

Pyriproxyfen is a relatively new introduction to the Brazilian environment; the microcephaly increase is a relatively n phenomenon. So the larvicide seems a plausible causative factor in microcephaly - far more so than GM mosquitos, v have blamed for the Zika epidemic and thus for the birth defects.

The PCST report, which also addresses the Dengue fever epidemic in Brazil, concurs with the findings of a separate n Zika outbreak by the Brazilian doctors' and public health researchers' organisation, Abrasco. [2]

Abrasco also names Pyriproxyfen as a possible cause of the microcephaly. It condemns the strategy of chemical cont carrying mosquitoes, which it says is contaminating the environment as well as people and is not decreasing the num mosquitoes.

Instead Abrasco suggests that this strategy is in fact driven by the commercial interests of the chemical industry, wh deeply integrated into the Latin American ministries of health, as well as the World Health Organization and the Pan A Health Organisation.

– EXHIBIT 12 –

The Washington Post

Morning Mix

'Like it's been nuked': Millions of bees dead after South Carolina sprays for Zika mosquitoes

By Ben Guarino September 1

Flowertown Bee Farm and Supplies
about a week ago

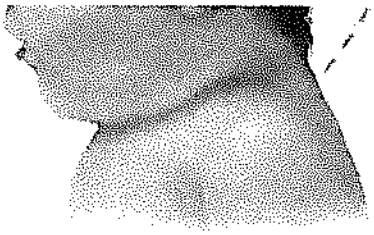
On Sunday morning, the South Carolina honey bees began to die in massive numbers.

Death came suddenly to Dorchester County, S.C. Stressed insects tried to flee their nests, only to surrender in little clumps at hive entrances. The dead worker bees littering the farms suggested that colony collapse disorder was not the culprit — in that odd phenomenon, workers vanish as though raptured, leaving a living queen and young bees behind.

Instead, the dead heaps signaled the killer was less mysterious, but no less devastating. The pattern matched acute pesticide poisoning. By one estimate, at a single apiary — Flowertown Bee Farm and Supply, in Summerville — 46 hives died on the spot, totaling about 2.5 million bees.

-EXHIBIT 13-

Walking through the farm, one Summerville woman wrote on Facebook, was "like visiting a cemetery, pure sadness."



Baby with
Severe Microcephaly

Click here to view a larger image

Microcephaly is a birth defect where a baby's head is smaller than expected when compared to babies of the same sex and age. Babies with microcephaly often have smaller brains that might not have developed properly.

What is microcephaly?

Microcephaly is a condition where a baby's head is much smaller than expected. During pregnancy, a baby's head grows because the baby's brain grows. Microcephaly can occur because a baby's brain has not developed properly during pregnancy or has stopped growing after birth, which results in a smaller head size. Microcephaly can be an isolated condition, meaning that it can occur with no other major birth defects, or it can occur in combination with other major birth defects.

What is severe microcephaly?

Severe microcephaly is a more serious, extreme form of this condition where a baby's head is much smaller than expected. Severe microcephaly can result because a baby's brain has not developed properly during pregnancy, or the brain started to develop correctly and then was damaged at some point during pregnancy.

Other Problems

Babies with microcephaly can have a range of other problems, depending on how severe their microcephaly is. Microcephaly has been linked with the following problems:

- Seizures
- Developmental delay, such as problems with speech or other developmental milestones (like sitting, standing, and walking)
- Intellectual disability (decreased ability to learn and function in daily life)
- Problems with movement and balance
- Feeding problems, such as difficulty swallowing

-EXHIBIT 14.1-

- Hearing loss
- Vision problems

Vision problems

These problems can range from mild to severe and are often lifelong. Because the baby's brain is small and underdeveloped, babies with severe microcephaly can have more of these problems, or have more difficulty with them, than babies with milder microcephaly. Severe microcephaly also can be life-threatening. Because it is difficult to predict at birth what problems a baby will have from microcephaly, babies with microcephaly often need close follow-up through regular check-ups with a healthcare provider to monitor their growth and development.

Occurrence

Microcephaly is not a common condition. State birth defects tracking systems have estimated that microcephaly ranges from 2 babies per 10,000 live births to about 12 babies per 10,000 live births in the Unites States.[1]

Causes and Risk Factors

The causes of microcephaly in most babies are unknown. Some babies have microcephaly because of changes in their genes. Other causes of microcephaly, including severe microcephaly, can include the following exposures during pregnancy:

- Certain infections during pregnancy, such as rubella, toxoplasmosis, or cytomegalovirus
- Severe malnutrition, meaning a lack of nutrients or not getting enough food
- Exposure to harmful substances, such as alcohol, certain drugs, or toxic chemicals
- Interruption of the blood supply to the baby's brain during development

Some babies with microcephaly have been reported among mothers who were infected with Zika virus while pregnant. CDC scientists announced that enough evidence has accumulated to conclude that Zika virus infection during pregnancy is a cause of microcephaly and other severe fetal brain defects.

CDC continues to study birth defects, such as microcephaly, and how to prevent them. If you are pregnant or thinking about becoming pregnant, talk with your doctor about ways to increase your chances of having a healthy baby.

Zika Virus and Pregnancy

For information about the effects of Zika virus infection during pregnancy, visit CDC's Zika and Pregnancy web page.

Diagnosis

Microcephaly can be diagnosed during pregnancy or after the baby is born.

During Pregnancy

-EXHIBIT 14.2-

During pregnancy, microcephaly can sometimes be diagnosed with an ultrasound test (which creates pictures of the body). To see microcephaly during pregnancy, the ultrasound test should be done late in the 2nd trimester or early in the third trimester. For more information about screening and confirmatory tests during pregnancy, visit