# Importancia de la Biotecnología Moderna

- Introducción: Desafíos de la Agricultura
- ¿Por qué necesitamos OGM's?
- Breve introduc. a la Biotecnología Moderna
- El Mundo es Plano para la Biotecnología Moderna
- Lecciones y Conclusiones

# “The World is Flat . . .”

Quality Seed mahyco Seed

**Welcome to Mahyco**

Established in 1964 by Dr. Badrinarayan R. Barwale, Mahyco is a pioneer and leader in the Indian Seed Industry. The company strives to provide quality hybrid seeds. Since its inception it has been engaged in plant genetic research and production of quality hybrid seeds for the farming community of India. Currently, it is engaged in the research, production, processing and marketing of approximately 115 products in 30 crop species including cereals, oilseeds, fibre and vegetables. Mahyco is also developing genetically enhanced crops with the use of gene transfer technology. Mahyco has a national presence with its network across the country

Mahyco is the first private enterprise in India to produce and market hybrids of Cotton, Sorghum, Pearl Millet, Sunflower and Wheat

Mahyco is the first Indian company to commercially grow and market transgenic Bollgard cotton- India's first transgenic crop in 2002



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Mahyco
Art of Leadership

**Mahyco...**
**Always a step ahead.**

# Primer cultivo OGM comestible desarrollado en la India

Business Standard

Monday, Nov 30, 2009





## Bt brinjal may be released commercially by year-end

BS Reporter / Kolkata April 15, 2009, 0:41 IST

Bt brinjal, the country's first genetically modified (GM) edible product, is in the final stage of getting a clearance from the Genetic Engineering Approval Committee (GEAC), the biotechnology regulatory body of the Government of India.

The Maharashtra Hybrid Seed Company-(Mahyco-) developed Bt brinjal had run into trouble last year with the Union health ministry and consumer organisations raising questions about its safety with regard to health.

Addressing a press conference here on Tuesday, Usha Barwale Zehr, joint director (research), Mahyco, said, "We have already got the GEAC's permission to produce Bt brinjal seeds for field trials, which have been completed. The scientific papers and data of the field trials have been submitted by the Review Committee on Genetic Modification (RCGM). It has been tested to be absolutely safe. We have applied for the commercial release of Bt brinjal seeds to the GEAC and hope it will be approved by the end of this year."

In 2006, Mahyco, a leading seed company in India, which had successfully introduced cutting edge biotech products such as Bt cotton hybrids, had applied for the commercial release of Bt brinjal, but GEAC had asked the company to conduct some more studies.

Mahyco had completed those studies and submitted the reports along with the application for commercial release again in 2008, Zehr said.

About the NGO campaigns against the release of Bt brinjal, fuelled by global studies questioning the health and safety of genetically modified edible products, Zehr claimed that in terms of composition, it was not different from the normal brinjal, except for the additional Bt protein. It would also improve the



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# Primer OGM Chino aprobado para uso comercial



## Origin Agritech gets approval for GM Phytase Corn

**Singapore, Nov 23, 2009:** Origin Agritech, a technology-focused supplier of crop seeds and agri-biotech research in China, has received the Bio-safety Certificate from the Ministry of Agriculture as a commercial approval of the world's first genetically modified phytase corn.

Origin's phytase corn is said to be the first transgenic corn to officially introduce the next generation of corn product approved and sold commercially into the domestic marketplace.

According to the company, genetically modified seed products in China must undergo five separate stages of approval beginning with a phase one laboratory approval to the final receipt of the Bio-safety Certificate in phase five. Currently, this GM seed approval process is restricted only to domestic seed producers such as Origin Agritech.

Phytase is currently used as an additive in animal feed to breakdown phytic acid in corn, which holds 60 percent of the phosphorus in corn. Phytase increases phosphorus absorption in animals by 60 percent. Phosphorus is an essential element for the growth and development of all animals, and plays key roles in skeletal structure and in vital metabolic pathways. Phytase, as an additive for animal feed, is mandatory in Europe, Southeast Asia, South Korea, Japan, and other regions for environmental purposes.

Phytase transgenic corn, developed by and licensed from Chinese Academy of Agricultural Science (CAAS) after seven years of study, will allow animal feed producers the ability to eliminate purchasing phytase and corn separately. It will eliminate the need for mixing the two ingredients together, saving time, machinery, and labor for the animal

# Origin Agritech Doubles as China Approves Corn Seeds (Update3)

Tuesday, 24 November 2009 18:59



Bloomberg News
November 23, 2009 Bloomberg News
By Jack Kaskey
November 23, 2009

www.bloomberg.com

Nov. 23 (Bloomberg) -- Origin Agritech Ltd., China's third-biggest seed producer, more than doubled in Nasdaq trading after the company won approval to sell the nation's first genetically modified corn seed.

Origin rose $11.24 to $10.45 at 4:29 p.m. in Nasdaq Stock Market trading, the biggest intraday gain since the shares were first sold to the public in March 2004. Origin has climbed nearly five-fold this year.

China's Ministry of Agriculture gave final approval to sell corn engineered to produce phytase, a feed additive that helps animals absorb phosphorous and reduce polluted runoff into waterways, Beijing-based Origin said in a Nov. 21 statement. China is the world's second-biggest corn producer after the U.S.

Phytase corn approval is "a potentially game-changing event that should have a materially positive impact to shareholders," Joe Giamichael, a New York-based analyst at Rodman & Renshaw, said today in a report. "This product will be expected to contribute to both revenue growth and margin expansion as the rollout gains traction domestically."

Giamichael raised his rating on the stock to "market outperform" from "market perform" with a 12-month to 18-month price target of $25. He raised his estimate for 2011 earnings per share to $1.41, from 60 cents.

A limited amount of the new seed will be available to Chinese growers in 2010, Irving Kau, vice president of finance, said today in an e-mailed message. As many as 100,000 acres may be planted in the first year, he said, repeating a Sept. 17 estimate.

'Landmark' Approval

# Segundo cultivo OGM chino es declarado seguro

REUTERS

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# EXCLUSIVE-China gives safety approval to GMO rice

Fri Nov 27, 2009 1:00am EST

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* China approves pest-resistant Bt strain as safe
* Large scale production could start in 2-3 years
* Approval follows physic corn clearance last week

* Corn, rice approvals are first for grains in China (Adds background, detail, quote)

By Niu Shuping and Tom Miles

BEIJING, Nov 27 (Reuters) - China, the world's largest rice producer and consumer, has approved a locally-developed strain of genetically-modified rice, paving the way for large-scale production in 2 to 3 years, Chinese scientists said on Friday.

The Ministry of Agriculture's Biosafety Committee has issued biosafety certificates to Bt rice, a pest-resistant genetically modified strain, two committee members told Reuters.

Along with GM physic corn approval announced last week, this is China's first two approvals for grains, although it already permits GM papaya, cotton and tomatoes.

But the strains still need to undergo registration and production trials before commercial production can begin in restricted areas, which may take 2-3 years, the scientists said.

EDITORS CHOICE


A selection of our best photos from the past 24 hours. Slideshow



SEARCH RESULTS

Results for "China approves GMO corn"

- Top rice producer China approves GMO strain Friday, 27 Nov 2009 05:45am EST
- Exclusive: Top rice producer China approves GMO strain Friday, 27 Nov 2009 05:47am EST
- EXCLUSIVE-China gives safety approval to GMO rice Thursday, 26 Nov 2009 08:06pm EST
- Rockline biotech feed harms farmers-EU farm chief

**PREMIO**

**"Junta General del Principado de Asturias-Sociedad Internacional de Bioética (SIBI)"**

**2009**

## *Mertxe de Renobales Scheifler*

*Universidad del País Vasco*

*(España)*

"Alimentos *más* sostenibles: Las semillas transgénicas en la agricultura ecológica"

Oviedo ESPAÑA Gijón

**Biografía**

Mertxe de Renobales Scheifler (Bilbao, 1948), licenciada en Ciencias Químicas (Universidad de Bilbao, 1973) y doctora en Bioquímica (Universidad de Nevada, Reno, 1979). Durante 13 años trabajó como investigadora y profesora en diversas universidades norteamericanas, principalmente en la Universidad de Nevada en Reno. Al volver al País Vasco, y tras 2 breves años como encargada de la Sección de Biotecnología en la Fundación Inasmet se incorporó a la Facultad de Farmacia de la Universidad del País Vasco/Euskal Herriko Unibertsitatea como Catedrática de Bioquímica. Entre otras obligaciones docentes, imparte dos asignaturas sobre alimentos transgénicos en los Másteres "Calidad y Seguridad Alimentaria" y "Nutrición y Salud", origen de su interés por la Bioética. Ha sido Decana y Vicedecana de la Facultad de Farmacia y actualmente es la Directora de Calidad del Campus de Álava. Su trabajo de investigación, centrado en general en los lípidos, se refleja en más de 80 publicaciones científicas. Desde 1992 dirige un grupo de investigación multidisciplinar que estudia los aspectos bioquímicos, microbiológicos y tecnológicos que influyen en la calidad nutricional y sensorial de los quesos de oveja.

Environ Int. 2011 May;37(4):734-42. Epub 2011 Feb 5.

# A literature review on the safety assessment of genetically modified plants.

Domingo JL, Giné Bordonaba J.

## Abstract

In recent years, there has been a notable concern on the safety of genetically modified (GM) foods/plants, an important and complex area of research, which demands rigorous standards. Diverse groups including consumers and environmental Non Governmental Organizations (NGO) have suggested that all GM foods/plants should be subjected to long-term animal feeding studies before approval for human consumption. In 2000 and 2006, we reviewed the information published in international scientific journals, noting that the number of references concerning human and animal toxicological/health risks studies on GM foods/plants was very limited. The main goal of the present review was to assess the current state-of-the-art regarding the potential adverse effects/safety assessment of GM plants for human consumption. The number of citations found in databases (PubMed and Scopus) has dramatically increased since 2006. However, new information on products such as potatoes, cucumber, peas or tomatoes, among others was not available. Corn/maize, rice, and soybeans were included in the present review. An equilibrium in the number research groups suggesting, on the basis of their studies, that a number of varieties of GM products (mainly maize and soybeans) are as safe and nutritious as the respective conventional non-GM plants, and those raising still serious concerns, was currently observed. Nevertheless, it should be noted that most of these studies have been conducted by biotechnology companies responsible of commercializing these GM plants. These findings suggest a notable advance in comparison with the lack of studies published in recent years in scientific journals by those companies. All this recent information is herein critically reviewed

# [A 104-week feeding study of genetically modified soybeans in F344 rats].

[Article in Japanese]

Sakamoto Y, Tada Y, Fukumori N, Tayama K, Aoki H, Takahashi H, Kuroda Y, Nagasawa A, Yano N, Yuzawa K, Ogata A.

Department of Environmental Health and Toxicology, Tokyo Metropolitan Institute of Public Health, Tokyo, Japan.

Shokuhin Eiseigaku Zasshi. 2008 Aug;49(4):272-82.

## Abstract

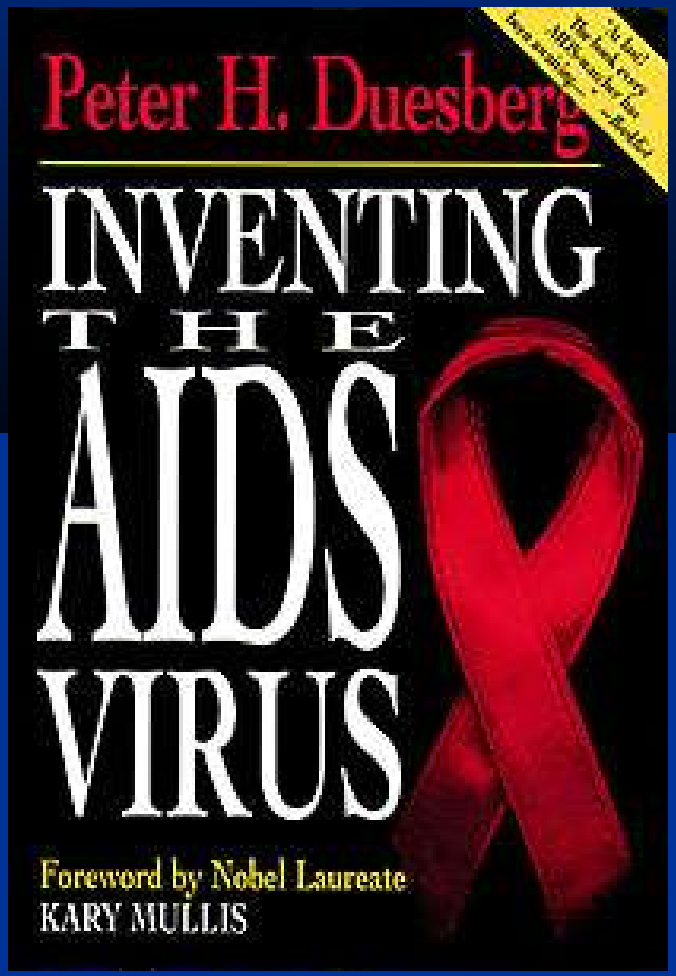
A chronic feeding study to evaluate the safety of genetically modified glyphosate-tolerant soybeans (GM soybeans) was conducted using F344 DuCrj rats. The rats were fed diet containing GM soybeans or Non-GM soybeans at the concentration of 30% in basal diet. Non-GM soybeans were a closely related strain to the GM soybeans. These two diets were adjusted to an identical nutrient level. In this study, the influence of GM soybeans in rats was compared with that of the Non-GM soybeans, and furthermore, to assess the effect of soybeans themselves, the groups of rats fed GM and Non-GM soybeans were compared with a group fed commercial diet (CE-2). General conditions were observed daily and body weight and food consumption were recorded. At the termination (104 weeks), animals were subjected to hematology, serum biochemistry, and pathological examinations. There were no differences in animal growth, food intakes, organ weights and histological findings between the rats fed the GM and/or Non-GM soybeans and the rats fed CE-2. However, body weight and food intake were similar for the rats fed the GM and Non-GM soybeans. Gross necropsy findings, hematological and serum biochemical parameters, and organ weights showed no meaningful difference between rats fed the GM and Non-GM soybeans. In pathological observation, there was neither an increase in incidence nor any specific type of nonneoplastic or neoplastic lesions in the GM soybeans group in each sex. These results indicate that long-term intake of GM soybeans at the level of 30% in diet has no apparent adverse effect in rats.

# Lecciones y Conclusiones

- La Biotecnología Verde puede ayudar a la agricultura peruana
- El mito de que los OGMs son solo para las transnacionales es . . . solo un mito.
- Las compañías chinas e indias del sector AgBiotec tienen mucho futuro.
- El maíz Phytasa es un buen ejemplo de colaboración entre el sector público y el privado

# Los primeros temores a una nueva tecnología


**An etching from the Anti-Vaccine Society illustrating the fear of the new method of vaccination with the cowpox virus introduced in 1796. Courtesy of the Hartford Medical Society**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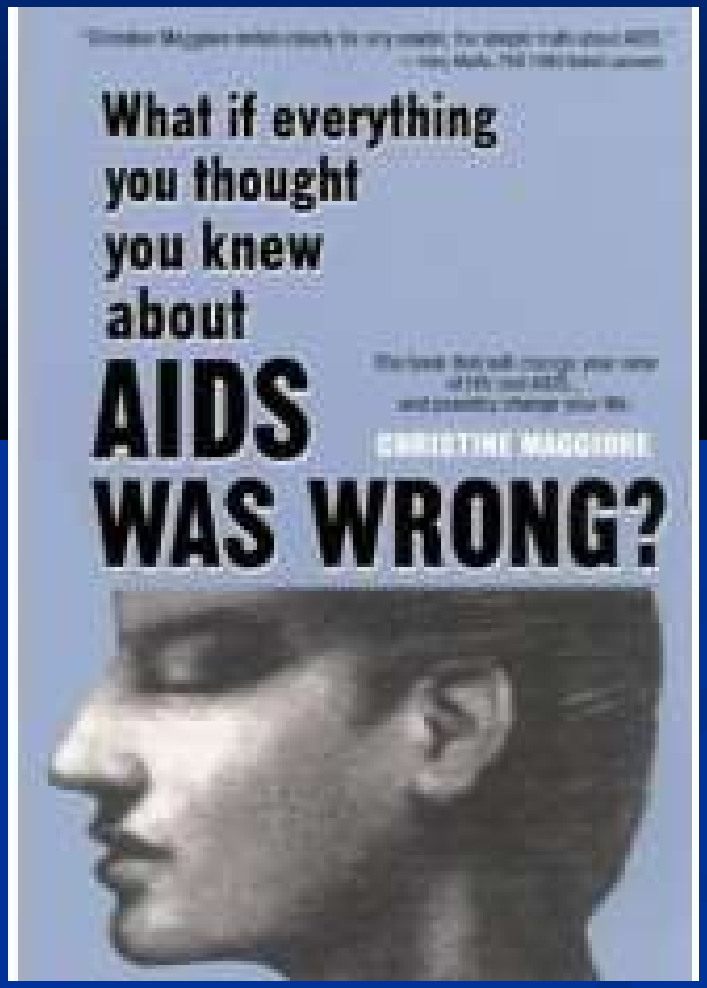
Foreword by Nobel Laureate
KARY MULLIS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WAS WRONG?


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=
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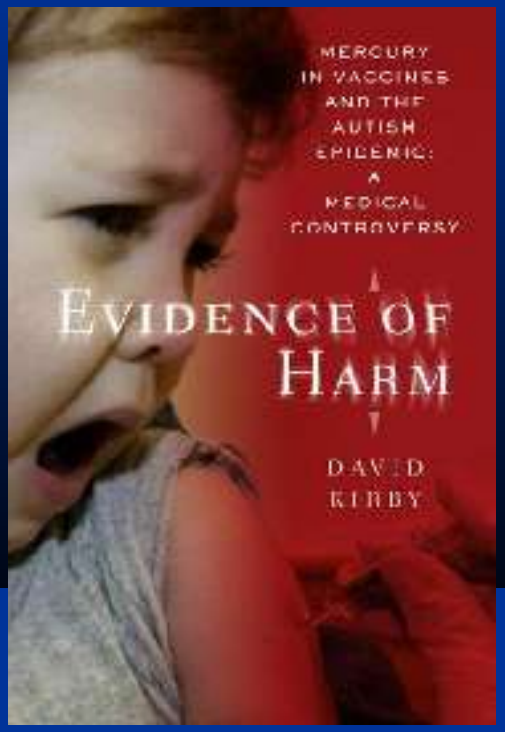
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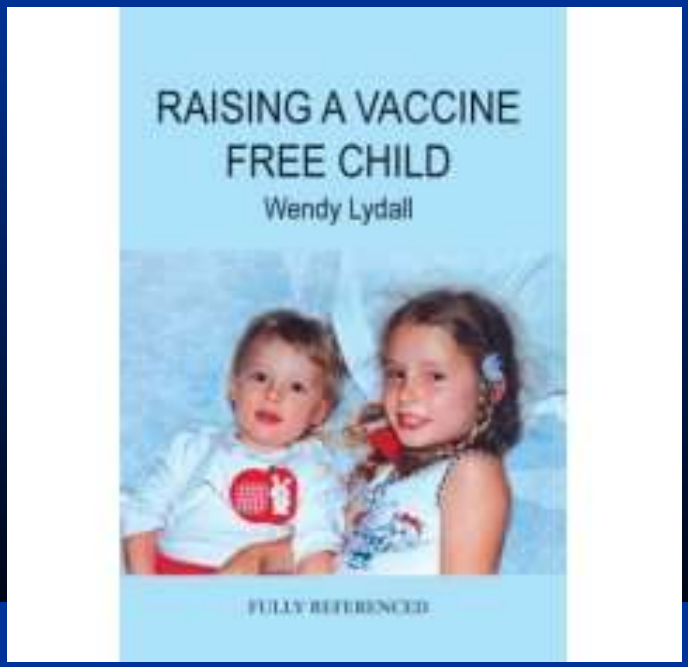
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Wendy Lydall
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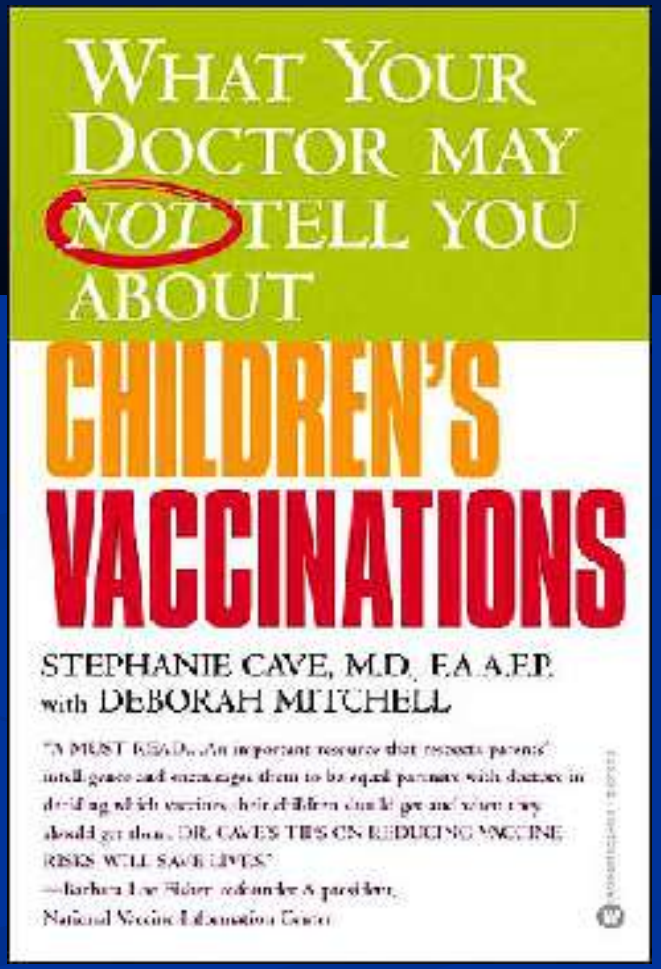
WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT
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STEPHANIE CAVE, M.D., F.A.A.F.P.
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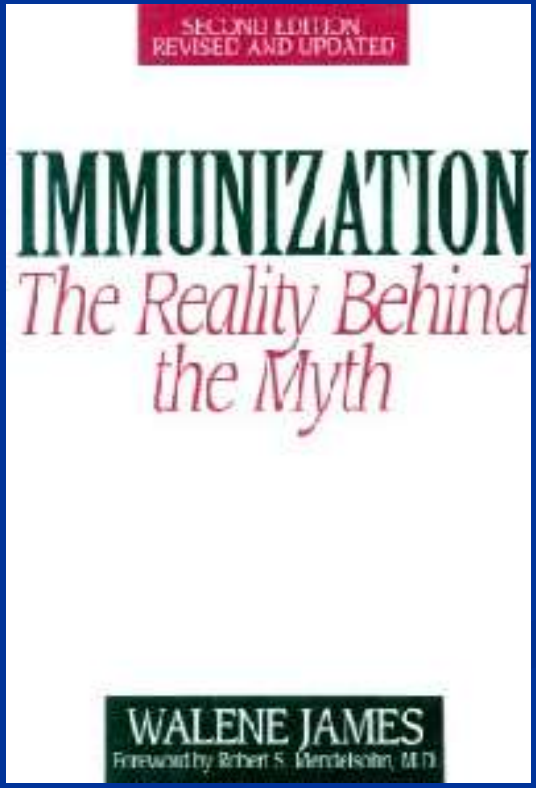
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REVISED AND UPDATED
IMMUNIZATION
The Reality Behind the Myth
WALENE JAMES

# Retracted autism study an 'elaborate fraud,' British journal finds

By the CNN Wire Staff

January 6, 2011 -- Updated 0114 GMT (0914 HKT)


British journal blasts autism study

**STORY HIGHLIGHTS**

- NEW: Dr. Andrew Wakefield says his work has been "grossly distorted"
- British journal BMJ accuses Wakefield of faking data for his

***Editor's note:*** *Watch Anderson Cooper's interview with the author of the discredited study, Dr. Andrew Wakefield, on "AC360°" at 10 p.m. ET tonight.*

**(CNN)** -- A now-retracted British study that linked autism to childhood vaccines was an "elaborate fraud" that has done long-



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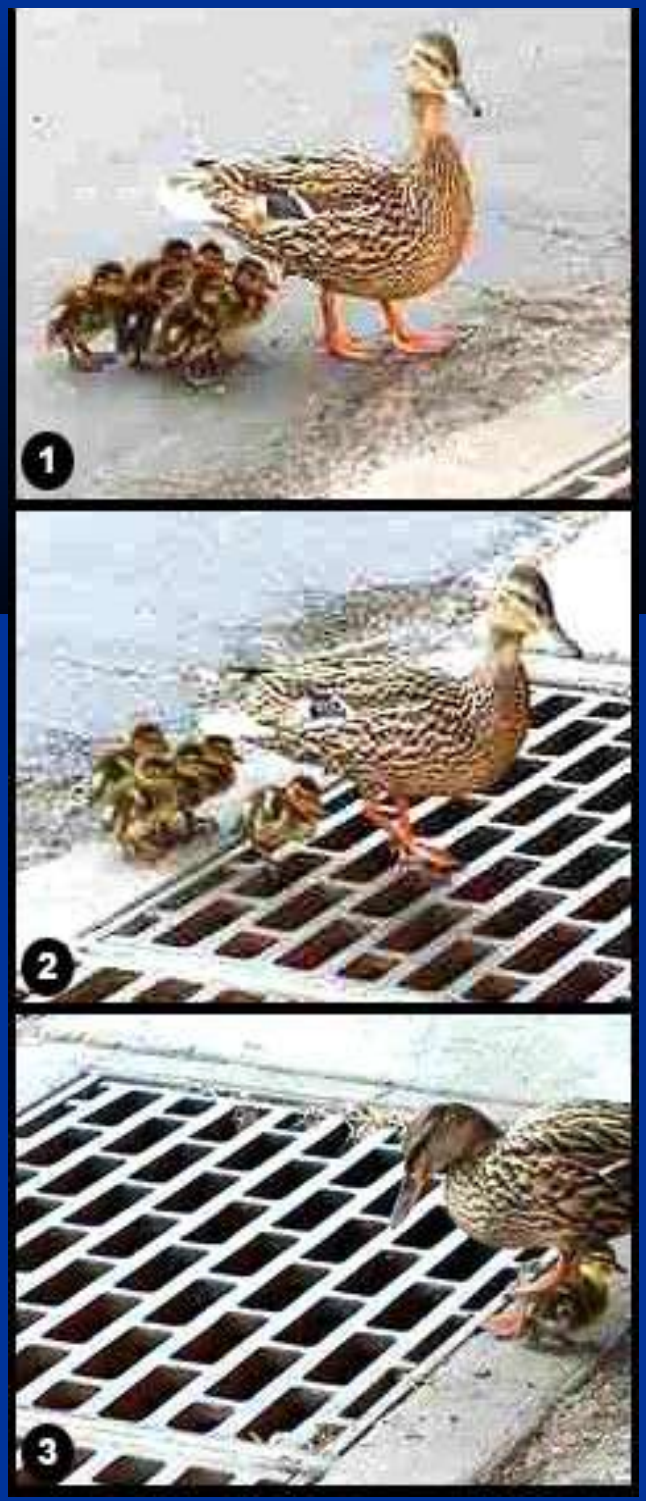


# Ooops !

**Hay que tener mucho cuidado con seguir los consejos y la ayuda desinteresada de las ONGs extranjeras de la Industria de la Protesta Internacional**

# Whole Earth Discipline: An Ecopragmatist Manifesto

The New York Times

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FINDINGS

An Early Environmentalist, Embracing New 'Heresies'

TIME WILL TELL Stewart Brand with a clock prototype for the 10,000-year clock

By JOHN [illegible]

Published: February 27, 2007

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" . . . I daresay the environmental movement has done more harm with its opposition to genetic engineering than with any other thing we've been wrong about . . . We've starved people, hindered science, hurt the natural environment and denied our own practitioners a crucial tool . . . If Greens don't embrace science and technology and jump ahead to a leading role in both, they may follow the Reds into oblivion . . ."

# MUCHAS GRACIAS