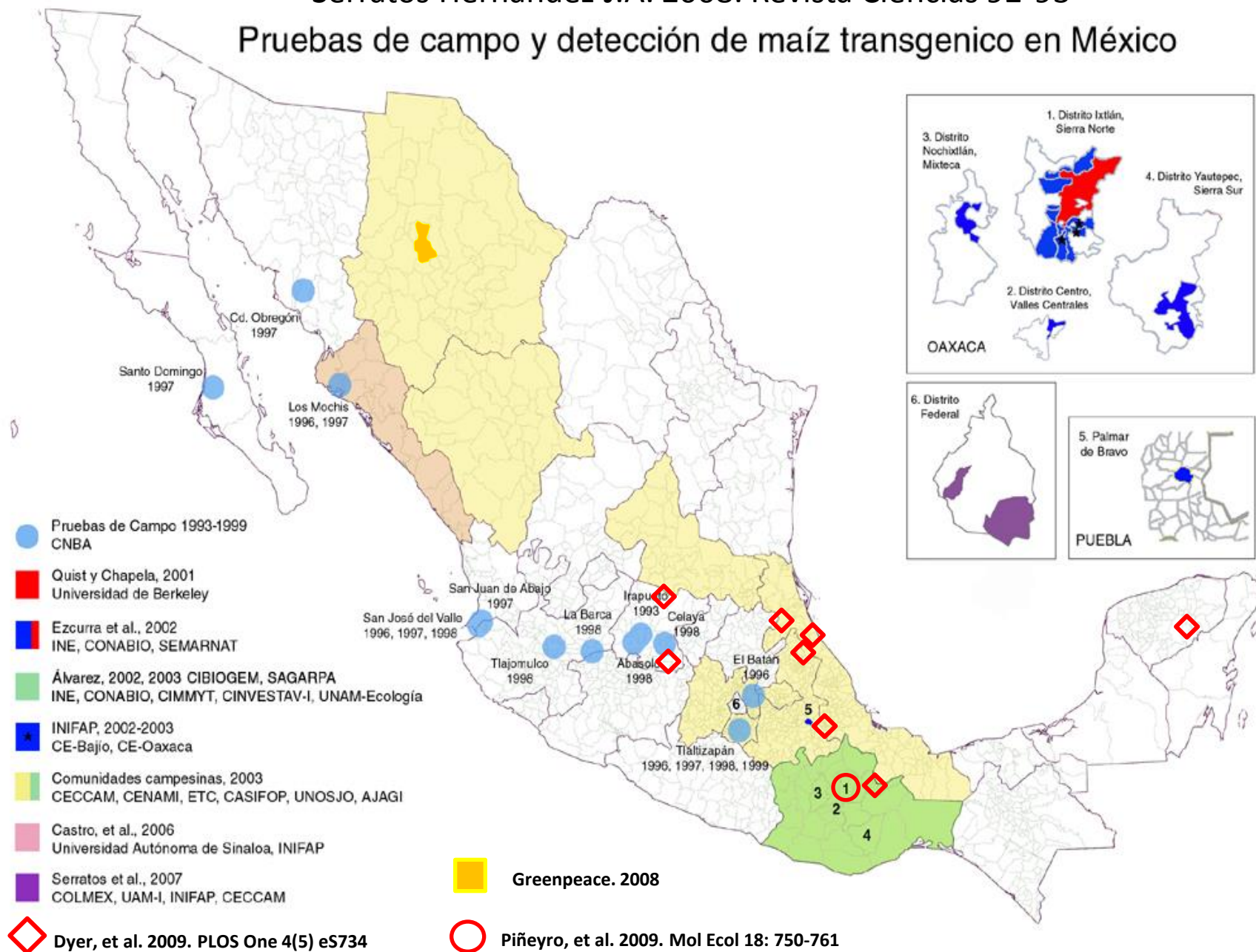


Estado actual de la contaminación de maíces nativos con ADN transgénico

José Antonio Serratos Hernández

**Unión de Científicos
Comprometidos con la Sociedad**

Pruebas de campo y detección de maíz transgénico en México





Jeffrey Stein
Regulatory Affairs Manager

November 14, 1994

Ciba Seeds
Agricultural Biotechnology
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**PETITION FOR DETERMINATION OF NONREGULATED STATUS
OF CIBA SEEDS' CORN GENETICALLY ENGINEERED TO
EXPRESS THE CRYIA(b) PROTEIN FROM *Bacillus*
thuringiensis subspecies *kurstaki***

Mr. Michael Lidsky,
Deputy Director
Biotech Coordination
USDA/APHIS

The undersigned submits this petition of 7 CFR 340.6 to request that the Director, BBEP, determine that Ciba Seeds' Bt Corn not be regulated under 7 CFR 340.

- 2. The Molecular Biology and Genetic Analysis of Bt Corn**
 - A. Event 176 Summary**

The initial transformation of Ciba's Bt corn was conducted in a proprietary corn (*Zea mays* Linnaeus) line, CG00526, an elite inbred of Lancaster parentage. Initial transformants (multiple plants from the single #176 event) in the inbred line CG00526 were crossed to CG00526 as well as to several other elite lines representing several heterotic groups.


Transfer of foreign genes into intact maize cells with high-velocity microprojectiles

(gene transfer/cell culture)

THEODORE M. KLEIN*, MICHAEL FROMM†, ARTHUR WEISSINGER‡, DWIGHT TOMES‡, STEVE SCHAAF‡, MARGIT SLETTEN‡, AND JOHN C. SANFORD*

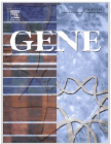
*Department of Horticultural Sciences, Cornell University, Geneva, NY 14556; †Plant Gene Expression Center, U.S. Department of Agriculture-ARS, 800 Buchanan Street, Albany, CA 94710; and ‡Pioneer Hi-Bred International, Department of Biotechnology Research, Johnston, IA 50131

Communicated by William L. Brown, November 2, 1987



Gene

Volume 13, Issue 1, January-February 1981, Pages 25-35



Construction and characterization of new cloning vehicles V. Mobilization and coding properties of pBR322 and several deletion derivatives including pBR327 and pBR328

Luis Covarrubias^a, Lourdes Cervantes^b, Alejandra Covarrubias^a, Xavier Soberón^a, Irma Vichido^a, Aurora Blanco^a, Yankel M. Kupersztosch-Portnoy^b, Francisco Bolívar

The EMBO Journal vol.6 no.9 pp.2513-2518, 1987

Engineering herbicide resistance in plants by expression of a detoxifying enzyme

M.De Block, J.Botterman, M.Vandewiele, J.Dockx, C.Thoen, V.Gosselé, N.Rao Movva^{1,2}, C.Thompson^{1,2}, M.Van Montagu and J.Leemans

Plant Genetic Systems N.V., J.Plateastraat 22, B-9000 Gent, Belgium, and Biogen S.A., 46, Route des Acacias, CH-1227 Geneva, Switzerland

²Present address: Institut Pasteur, 25 et 28 Rue du Docteur Roux, 75724 Paris F-Cedex 15, France

Communicated by M.Van Montagu

United States Patent [19]

Sanford et al.

[11] Patent Number: 4,945,050

[45] Date of Patent: Jul. 31, 1990

[54] METHOD FOR TRANSPORTING SUBSTANCES INTO LIVING CELLS AND TISSUES AND APPARATUS THEREFOR

[75] Inventor: John C. Sanford, Geneva; Edward D. Wolf, Ithaca; Nelson K. Allen, New York, all of N.Y.

[73] Assignee: Cornell Research Foundation, Inc., Ithaca, N.Y.

[21] Appl. No. 600,000

[22] Filed: Nov. 13, 1984

[51] Int. Cl.⁵ C12N 15/00; C12N 15/89

[52] U.S. Cl. 435/172.1; 435/172.3; 435/173; 435/240.1; 435/240.2; 424/3; 935/53; 935/54; 935/57; 604/131; 604/140; 604/141; 604/143

Hosler, A. M. Johnson, A. R. Jones, 1988, Science, 240:1534-1538.
Johnston, S. A., R. Butow., K. Shark, and J. C. Sanford, 1988, Science, 240:1538-1541.
McCabe, D. E., B. J. Martinell, and P. Christou, 1988, Bio/Technology 6:923-926.
Christou, P., D. E. McCabe, and W. F. Swain, 1988, Plant Physiology 87:671-674.
Perry et al (edit.), Chemical Engineers' Handbook, McGraw-Hill, New York, (1973), pp. 6-5 through 6-7.
Bankert et al., Transplantation Proceedings, vol. 12, No. 3, (1980), pp. 443-446.
Klein et al., Nature, vol. 327, No. 6117, May 7, 1987, pp. 70-73.
The Washington Post, May 18, 1987, p. A12.
Browne, "Shotgun's Blast May Create New Forms of

1. **Initial efficacy evaluation.** This field test was conducted in 1992 and was described by Koziel *et al.* (Appendix 1).
2. **Gene efficacy studies.** Experiments were conducted in 1993 and 1994 to assess the effect of 176 ICP on yield and other agronomic traits. The 1993 experimental results were summarized by Christensen *et al.* (Appendix 2).
3. **Insecticide comparisons.** A 1994 Ciba trial compared a hybrid containing the *cryIA(b)* gene with several commonly used insecticides for control of ECB. In addition, Ciba included a 176 ICP hybrid in a 1994 insecticide evaluation trial conducted by the University of Illinois.
4. **Performance evaluation strip tests.** These 1994 tests compared the performance of isogenic hybrids with and without the 176 ICP gene in naturally infested field conditions.

194 BIO/TECHNOLOGY VOL. 11 FEBRUARY 1993

Field Performance of Elite Transgenic Maize Plants Expressing an Insecticidal Protein Derived from *Bacillus thuringiensis*

Michael G. Koziel*, Gary L. Beland¹, Cindy Bowman, Nadine B. Carozzi, Rebecca Crenshaw, Lyle Crossland, John Dawson, Nalini Desai, Martha Hill, Sue Kadwell, Karen Launis, Kelly Lewis, Daryl Maddox, Kathryn McPherson, Moez R. Meghji¹, Ellis Merlin, Richard Rhodes, Gregory W. Warren, Martha Wright and Stephen V. Evola

CIBA-GEIGY Agricultural Biotechnology Research Unit, Research Triangle Park, NC 27709. ¹CIBA-GEIGY Seeds, 1301 West Washington, Bloomington, IL 61702. *Corresponding author.

We introduced a synthetic gene encoding a truncated version of the CryIA(b) protein derived from *Bacillus thuringiensis* into immature embryos of an elite line of maize using microprojectile bombardment. This gene was expressed using either the CaMV 35S promoter or a combination of two tissue specific promoters derived from maize. High levels of CryIA(b) protein were obtained using both promoter configurations. Hybrid maize plants resulting from crosses of transgenic elite inbred plants with commercial inbred lines were evaluated for resistance to European corn borer under field conditions. Plants expressing high levels of the insecticidal protein exhibited excellent resistance to repeated heavy infestations of this pest.

TABLE 11. 1994 *Bt* Maize Field Sites*

	State	# of Sites	Acreage	# of Plants
1	California	1	0.1	1,800
2	Colorado	2	0.2	3,600
3	Florida	1	4.0	98,000
4	Hawaii	1	6.0	138,000
5	Illinois	9	0.9	16,200
6	Indiana	4	0.4	7,200
7	Iowa	6	0.6	10,800
8	Kansas	1	0.1	1,800
9	Kentucky	1	0.1	1,800
10	Michigan	1	0.1	1,800
11	Minnesota	4	0.4	7,200
12	Massachusetts	1	0.1	1,800
13	Missouri	5	0.5	9,000
14	Nebraska	11	1.1	19,800
15	North Carolina	2	0.2	3,600
16	Ohio	3	0.3	5,400
17	Pennsylvania	1	0.1	1,800
18	South Dakota	1	0.1	1,800
	Total	55	15.3	331,400

*Field tests were conducted under USDA permits #94-056-06N and #94-076-10N, and EPA Experimental Use Permit #66736-EUP-1.

A company of Hoechst and NOR-AM

December 28, 1994

Ms. Dianne Hatmaker
Chief, Biotechnology Program Operations

**Petition for Determination of
Nonregulated Status:**

Glufosinate Resistant Corn Transformation Events T14 and T25

**The undersigned submits this petition under 7 CFR 340.6 to request that the
Director, BBEP, make a determination that the article should not be regulated
under 7 CFR 340.**

The GRC transformation events T14 and T25 contain a synthetic version of the *pat* gene derived from *Streptomyces viridochromogenes*, strain Tü 494 (Bayer et al., 1972). The *pat* gene encodes the enzyme phosphinothricin acetyltransferase (PAT), which confers resistance to the herbicide GA. Since

AgrEvo GmbH, formerly Hoechst Ag, Frankfurt, Germany, introduced the plasmid DNA into corn protoplasts by a direct uptake technique. In this technique protoplasts and DNA are mixed together in a buffered solution and a polyethylene glycol solution is added dropwise. After gentle mixing and

A. Field Tests of Events T14 and T25

Transformation events T14 and T25 have been field tested by AgrEvo USA Company since 1992 in the primary corn growing regions of the United States. These tests have occurred at approximately 78 sites under field release authorizations granted by APHIS (USDA authorizations: permits 92-017-04, 92-043-01, 93-021-10, 93-021-11; notifications 93-120-17, 93-120-27, 94-074-03). A field release is currently in progress under notification 94-272-03. Transformation events T14 and/or T25 have also been field tested in Germany, France, Italy, Canada and Chile. Performance in these countries has been similar to that in the United States.

Federal Register

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1995

Availability of Determination of Nonregulated Status for Genetically Engineered Corn

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of our determination that Ciba Seeds' corn designated as Event 176 Corn that has been genetically engineered for insect resistance is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our determination is based on our evaluation of data submitted by Ciba

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Federal Register

134

1995

Availability of Determination of Nonregulated Status for Genetically Engineered Corn

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of our determination that corn developed by AgrEvo USA Company designated as Glufosinate Resistant Corn Transformation Events T14 and T25 that has been genetically engineered for tolerance to the herbicide glufosinate is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our determination is based on our evaluation of data submitted by AgrEvo

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**Availability of Determination of
Nonregulated Status for Genetically
Engineered Corn**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of our determination that the Monsanto Company's corn line designated as MON 80100 that has been genetically engineered for insect resistance is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our

**Monsanto Co.; Addition of Two
Genetically Engineered Insect
Resistant Corn Lines to Determination
of Nonregulated Status**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: The Animal and Plant Health Inspection Service is announcing that it has added two additional genetically engineered, insect resistant corn lines to its August 22, 1995, determination that the Monsanto Company's corn line MON 80100 need no longer be regulated. The effect of this action is that two additional insect resistant corn lines designated as MON 809 and MON 810, which have been modified by the incorporation of genetic material

**Plant Genetic Systems (America), Inc.;
Availability of Determination of
Nonregulated Status for Corn Line
Genetically Engineered for Male
Sterility and Glufosinate Herbicide
Tolerance as a Marker**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of our determination that a corn line developed by Plant Genetic Systems (America), Inc., designated as event MS3 that has been genetically engineered for male sterility and tolerance to the herbicide glufosinate as a marker is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our determination is based on our evaluation of data submitted by the Northrup King Co.; Availability of Determination of Nonregulated Status for Corn Line Genetically Engineered for Insect Resistance

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of our determination that a corn line developed by the Northrup King Company designated as Bt11 that has been genetically engineered for insect resistance is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our determination is based on our evaluation of data submitted by the

**Dekalb Genetics Corporation;
Availability of Determination of
Nonregulated Status for Corn Line
Genetically Engineered for Glufosinate
Herbicide Tolerance**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of
our determination that a corn line
developed by the Dekalb Genetics
Corporation designated as B16 that has
been genetically engineered for
tolerance to the herbicide glufosinate is

no longer consi
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**Dekalb Genetics Corp.; Availability of
Determination of Nonregulated Status
for Genetically Engineered Corn**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of
our determination that the Dekalb
Genetics Corporation's corn line
designated as DBT418 that has been
genetically engineered for lepidopteran
insect resistance is no longer considered
a regulated article under our regulations
governing the introduction of certain
genetically engineered organisms. Our
determination is based on our

**Monsanto Co. and Dekalb Genetics
Corp.; Availability of Determination of
Nonregulated Status for Genetically
Engineered Corn Line**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of
our determination that a corn line
developed by Monsanto Company and
Dekalb Genetics Corporation designated
as GA21, which has been genetically

**Monsanto Co.; Availability of
Determination of Nonregulated Status
for Genetically Engineered Corn**

AGENCY: Animal and Plant Health
Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public of
our determination that the Monsanto
Company's corn line designated as
MON 802, which has been genetically
engineered for insect resistance and
glyphosate herbicide tolerance, is no
longer considered a regulated article
under our regulations governing the
introduction of certain genetically
engineered organisms. Our
determination is based on our
evaluation of data submitted by the

Moratoria de facto para pruebas de campo con maíz transgénico. 1998-1999

Se reanudaron los permisos en 2005

- Discusión en el seno del CNBA
- Ensayos con maíz de 1992 a 1998
- Diferentes posiciones: desde prohibición hasta liberación supervisada
- Recomendación de moratoria a la SARH
- Adopción de la medida por medio del cierre de ventanilla para solicitudes (*de facto*)

2008

Syngenta Seeds, Inc.; Availability of Petition and Environmental Assessment for Determination of Nonregulated Status for Corn Genetically Engineered To Produce an Enzyme That Facilitates Ethanol Production

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Notice.

SUMMARY: We are advising the public that the Animal and Plant Health Inspection Service has received a petition from Syngenta Seeds, Inc., seeking a determination of nonregulated status for corn designated as transformation event 3272, which has been genetically engineered to produce a microbial enzyme that facilitates

2010

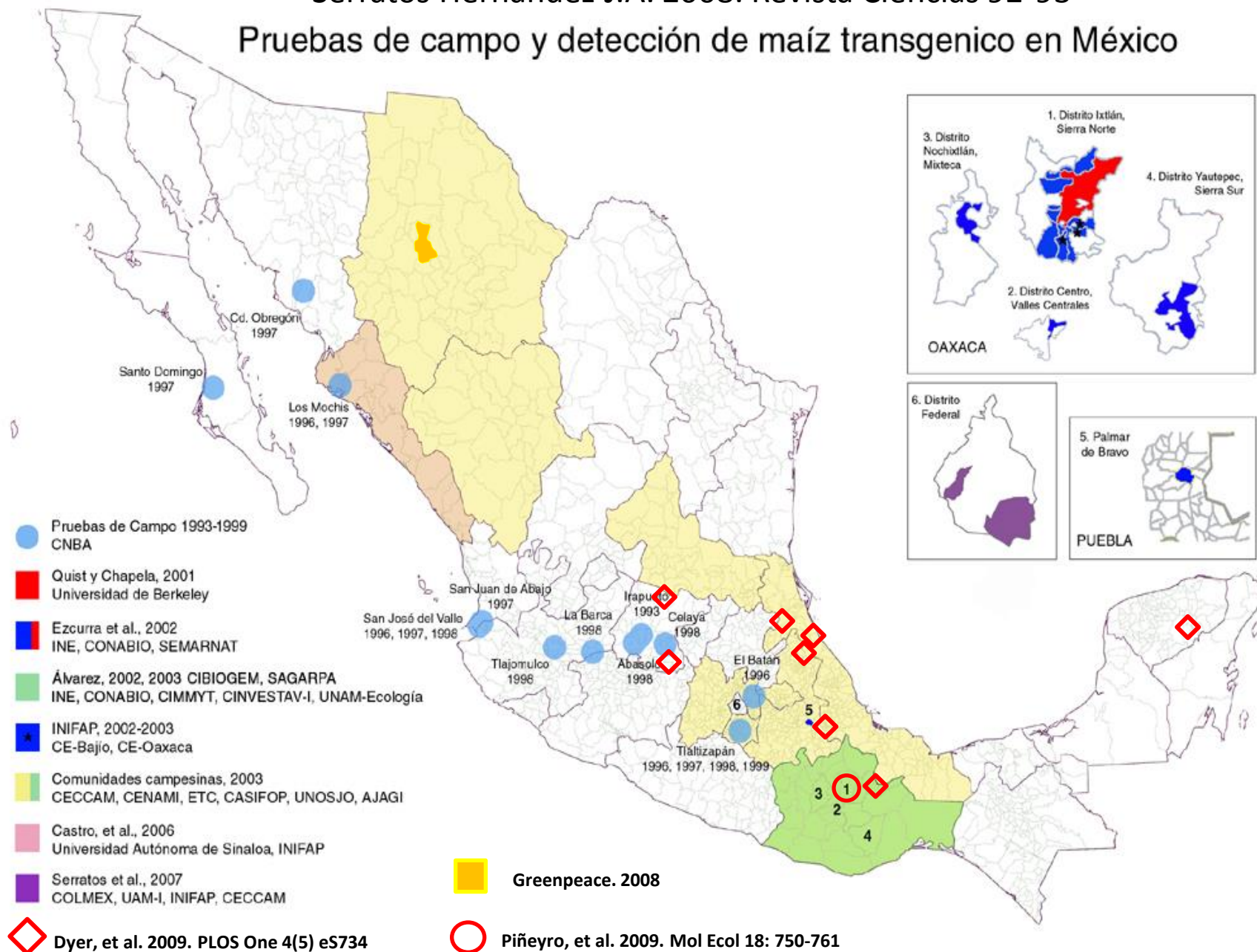
Syngenta Biotechnology, Inc.; Determination of Nonregulated Status for Corn Genetically Engineered for Insect Resistance

AGENCY: Animal and Plant Health Inspection Service, USDA.

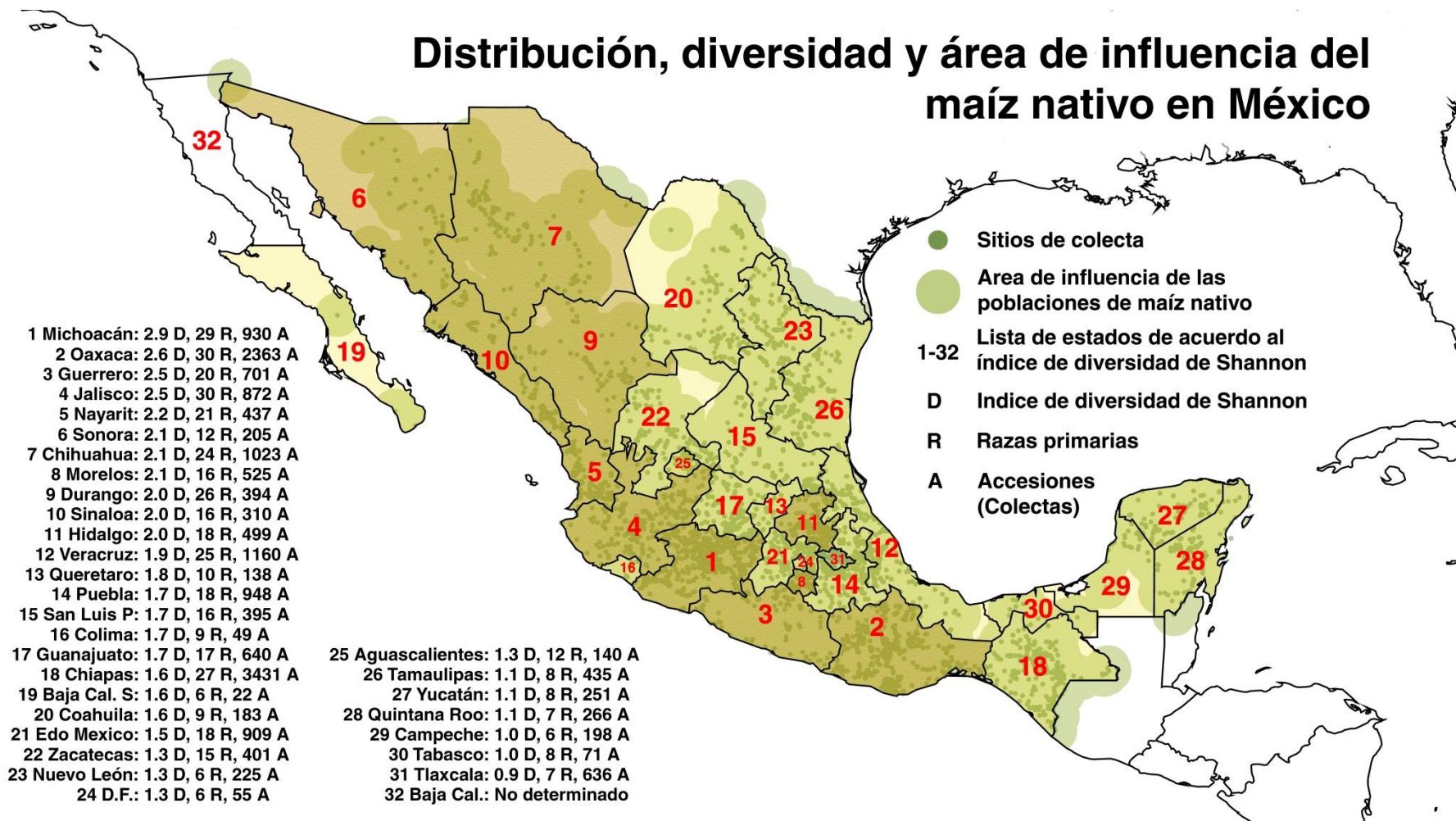
ACTION: Notice.

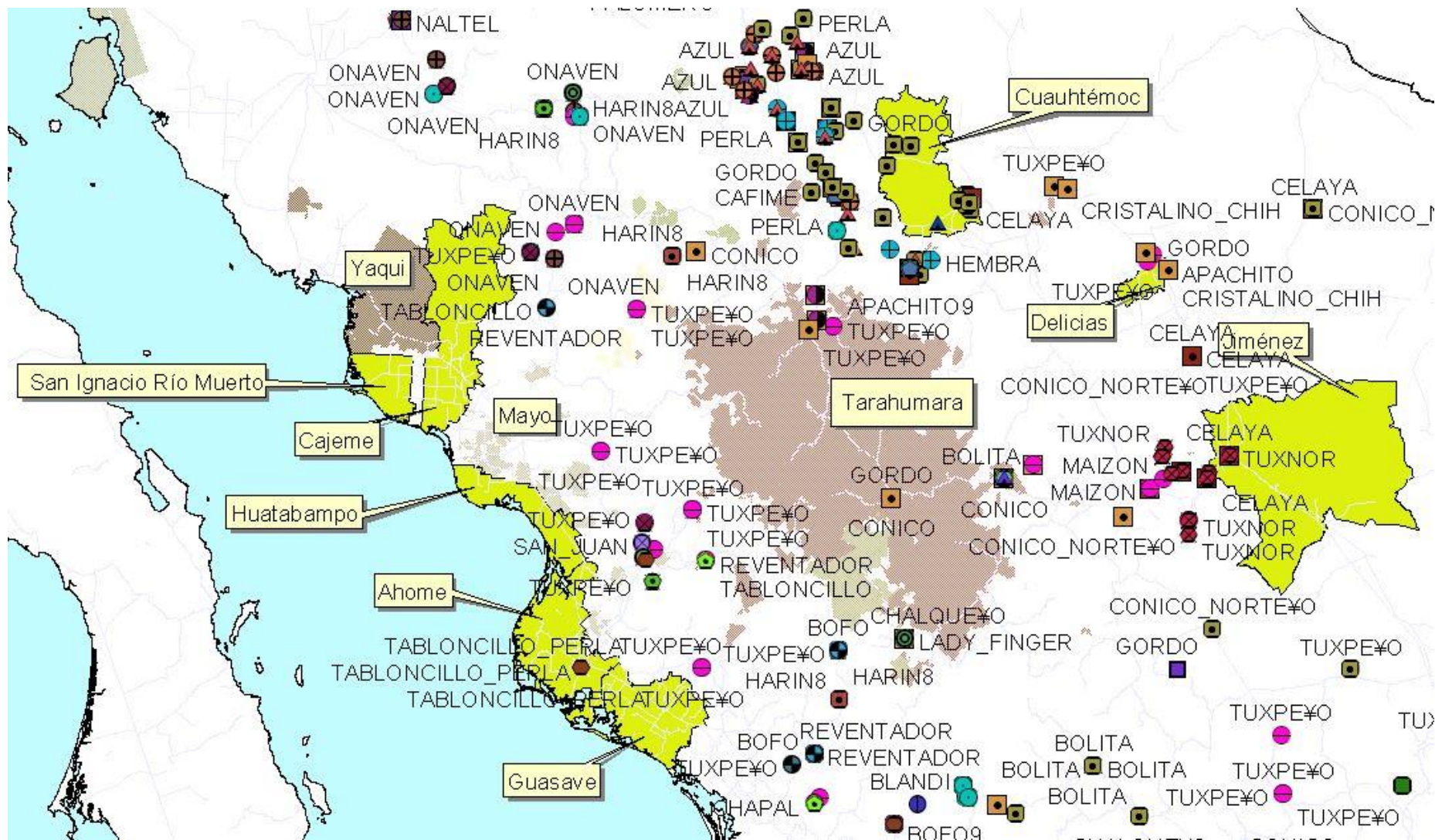
SUMMARY: We are advising the public of our determination that a corn line developed by Syngenta Biotechnology, Inc., designated as transformation event MIR162, which has been genetically engineered for insect resistance, is no longer considered a regulated article under our regulations governing the introduction of certain genetically engineered organisms. Our determination is based on our

Pruebas de campo y detección de maíz transgénico en México



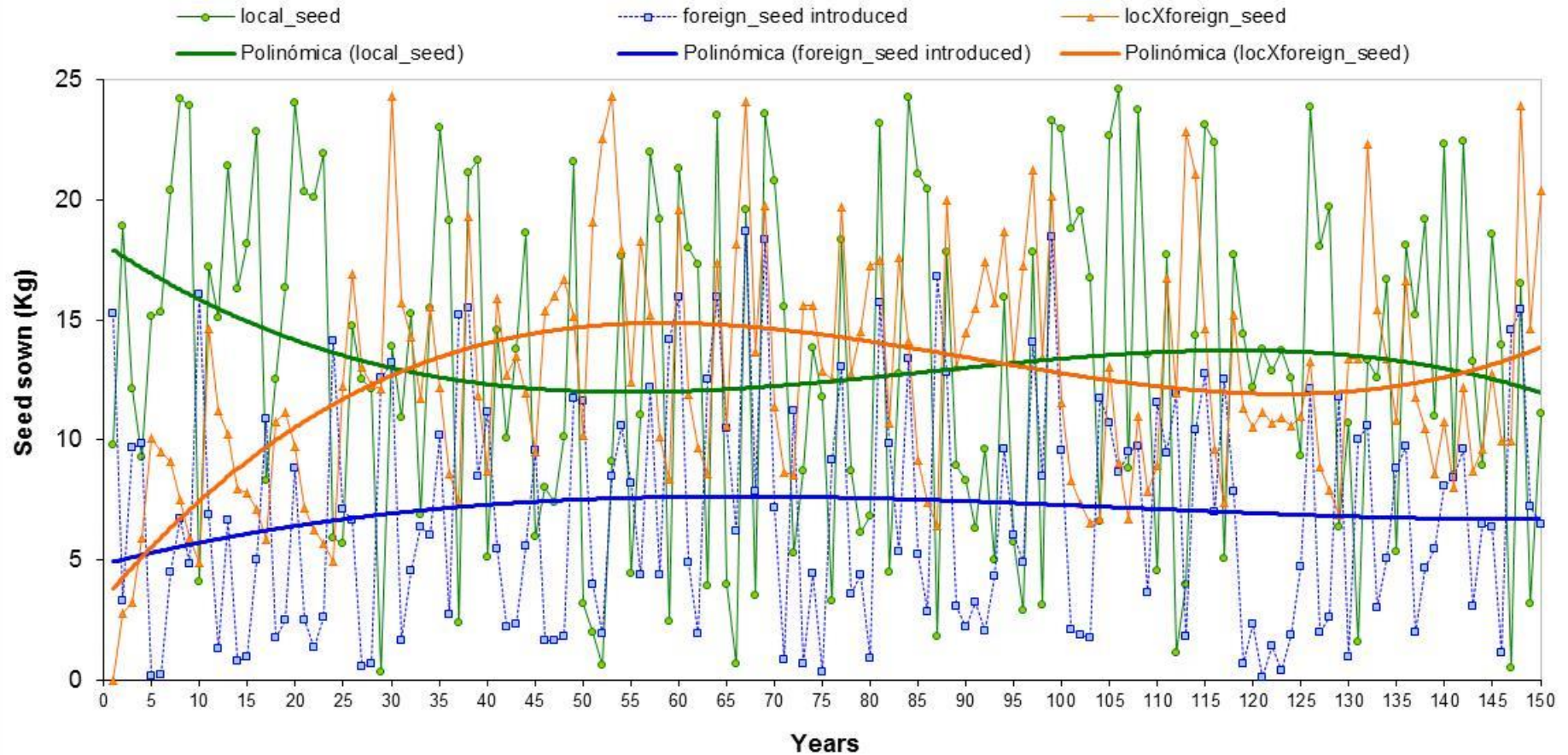
Distribución, diversidad y área de influencia del maíz nativo en México





Ahora lo ves, ... ¡ahora no lo ves!

Replace/discard foreign seed lots



Pruebas de campo y detección de maíz transgénico en México

