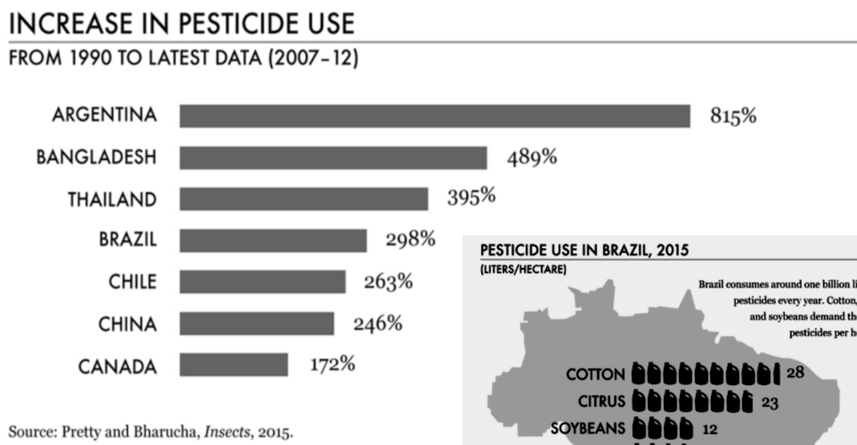
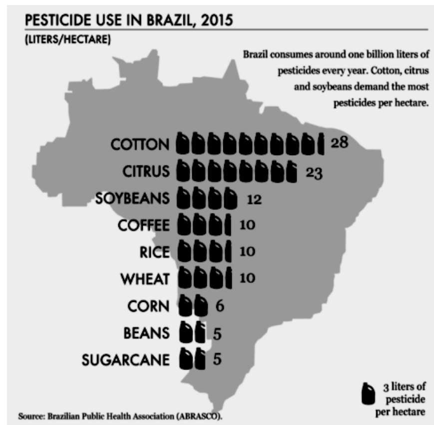
ALIDA
Cotton Sustainability

Keshav R Kranthi

ICAC

Aleszu Bajak, https://ensia.com/features/developing-world-pesticides/





Aleszu Bajak, https://ensia.com/features/developing-world-pesticides/

THE ALABAMA BOLL WEEVIL MONUMENT 1919

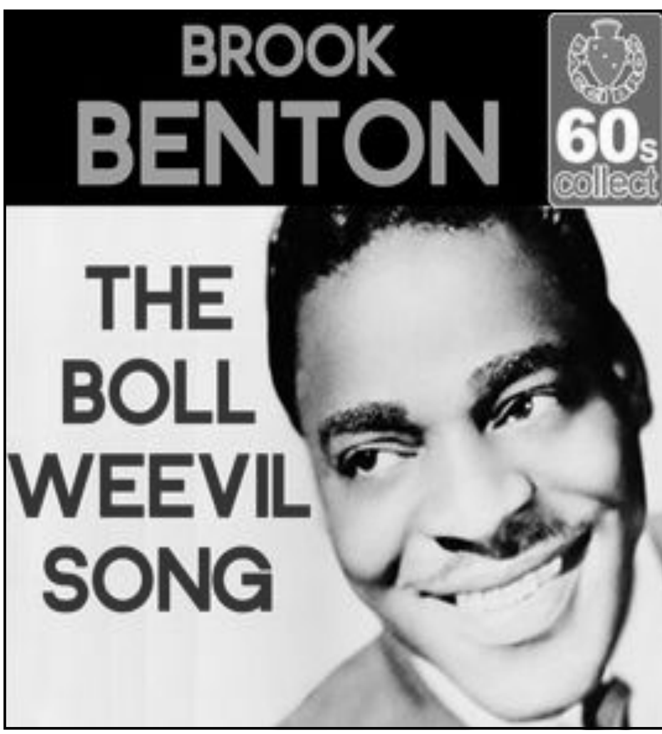
BOLL WEEVIL SONGS 1929 & 1959

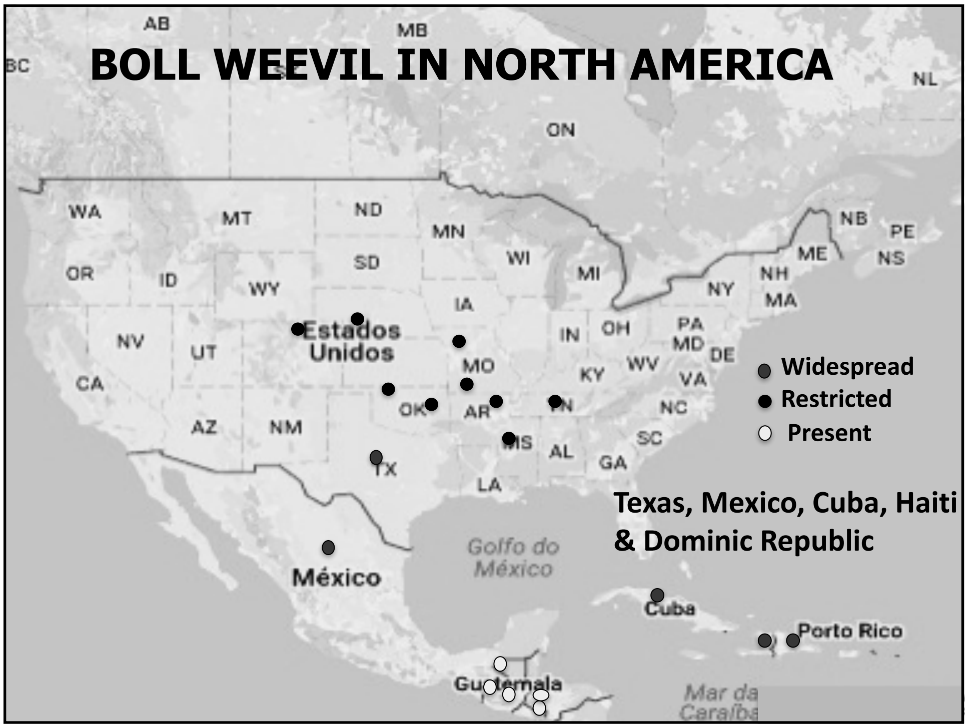
"Mississippi Boweevil Blues"	
Single by Charlie Patton	
B-side	"Screamin' and Hollerin' the Blues"
Released	1929
Format	78"
Recorded	June 14, 1929 Richmond, Indiana
Genre	Delta blues
Length	3:09
Label	Paramount
Songwriter(s)	Charlie Patton
Producer(s)	H.C. Spier

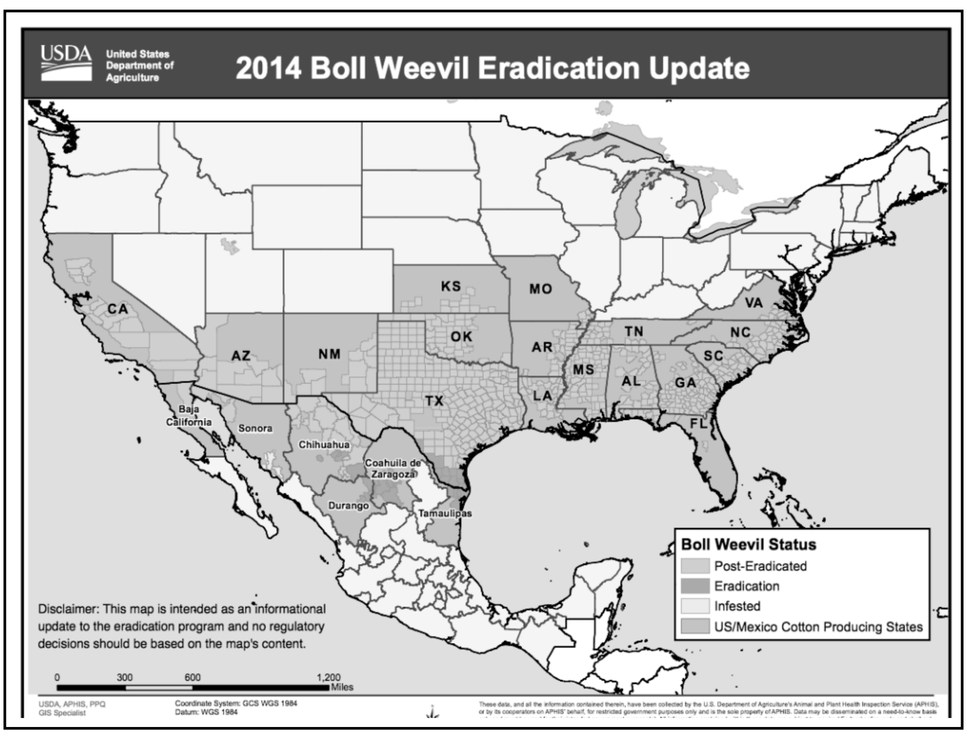
Charlie Patton singles chronology		
"Prayer of Death (Parts 1 & 2) (1929)"	"**Mississippi Boweevil Blues**" *(1929)*	"Down the Dirt Road Blues" *(1929)*

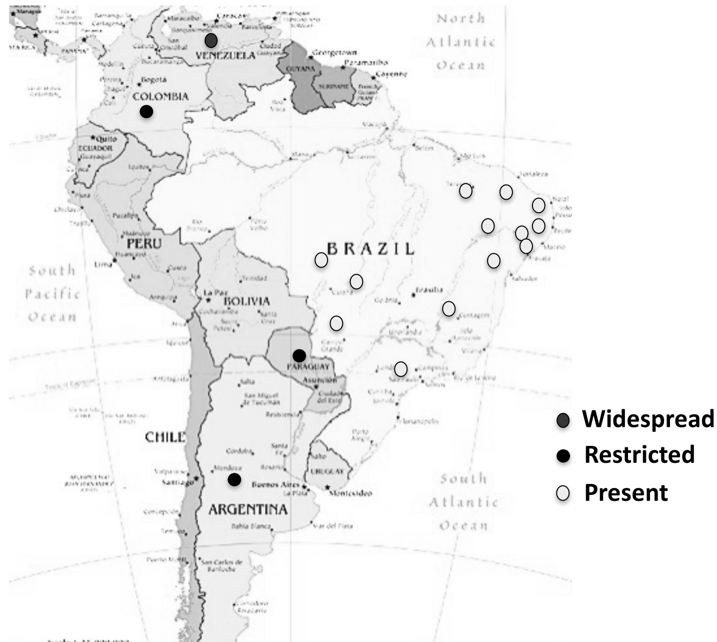
"Boll Weevil Song"	
Single by Eddie Cochran	
from the album *Never to Be Forgotten*	
A-side	"Somethin' Else"
Released	July 1959
Format	7" 45rpm
Recorded	23 June 1959
Genre	Rock and roll
Label	Liberty F-55203
Songwriter(s)	Traditional
Producer(s)	Eddie Cochran

Eddie Cochran singles chronology		
"Teenage Heaven" (1959)	"**Somethin' Else**" (1959)	"Hallelujah, I Love Her So" (1959)




BOLL WEEVIL IN NORTH AMERICA
AB
MB
BC
NL
ON
WA
MT
ND
MN
NB
PE
NS
ME
OR
ID
SD
WI
MI
NH
WY
NY
MA
IA
Estados
Unidos
PA
IN
OH
MD
NV
UT
DE
MO
Widespread
CA
KY
WV
VA
Restricted
OK
AR
TN
NC
AZ
NM
Present
MS
AL
SC
TX
GA
LA
Texas, Mexico, Cuba, Haiti
& Dominic Republic
Golfo do
México
México
Cuba
Porto Rico
Guatemala
Mar das
Caraíbas


USDA United States Department of Agriculture
2014 Boll Weevil Eradication Update
KS
MO
VA
CA
TN
NC
OK
AR
AZ
NM
SC
MS
AL
GA
TX
LA
FL
Baja California
Sonora
Chihuahua
Coahuila de Zaragoza
Durango
Tamaulipas
Boll Weevil Status
Post-Eradicated
Eradication
Infested
US/Mexico Cotton Producing States
Disclaimer: This map is intended as an informational update to the eradication program and no regulatory decisions should be based on the map's content.
0
300
600
1,200
Miles
USDA, APHIS, PPQ
GIS Specialist
Coordinate System: GCS WGS 1984
Datum: WGS 1984



BOLL WEEVIL IN SOUTH AMERICA

NEW TECHNOLOGIES / CONCEPTS

1. Cry10Aa Transgenic cotton
2. RNAi chitin synthase-2
3. CPTi Transgenic cotton CAAS
4. Kaolin sprays
5. Green leafy & Flower volatiles to fortify pheromones

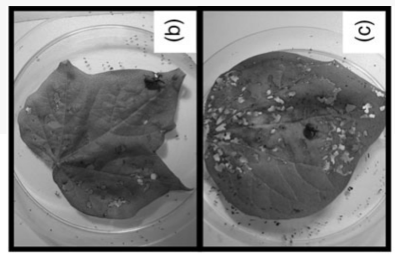
Plant Biotechnology Journal

Plant Biotechnology Journal (2017), pp. 1–13 doi: 10.1111/pbi.12694

Transgenic cotton expressing Cry10Aa toxin confers high resistance to the cotton boll weevil

Thuanne Pires Ribeiro[1,2], Fabricio Barbosa Monteiro Arraes[2,3], Isabela Tristan Lourenço-Tessutti[2], Marilia Santos Silva[2], Maria Eugênia Lisei-de-Sá[2,4], Wagner Alexandre Lucena[2,5], Leonardo Lima Pepino Macedo[2], Janaina Nascimento Lima[2], Regina Maria Santos Amorim[2], Sinara Artico[6], Márcio Alves-Ferreira[6], Maria Cristina Mattar Silva[2] and Maria Fatima Grossi-de-Sa[2,7,]*

[1]Brasília Federal University (UnB), Brasília, DF, Brazil
[2]Embrapa Genetic Resources and Biotechnology, Brasília, DF, Brazil
[3]Rio Grande do Sul Federal University, Porto Alegre, RS, Brazil
[4]Agricultural Research Company of Minas Gerais State, Uberaba, MG, Brazil
[5]Embrapa Cotton, Campina Grande, PB, Brazil
[6]Rio de Janeiro Federal University, Rio de Janeiro, RJ, Brazil
[7]Catholic University of Brasília, Brasília, DF, Brazil



Knocking down chitin synthase 2 by RNAi is lethal to the cotton boll weevil

L.L.P. Macedo[a,b], J.D. Antonino-de-Souza Júnior[b,c], R.R. Coelho[b,c], F.C.A. Fonseca[b,c], A.A.P. Firmino[b,d], M.C.M. Silva[b], R.R. Fragoso[e], E.V.S. Albuquerque[b], M.S. Silva[b], J. de Almeida Engler[f], W.R. Terra[g], M.F. Grossi-de-Sa[a,b,]*

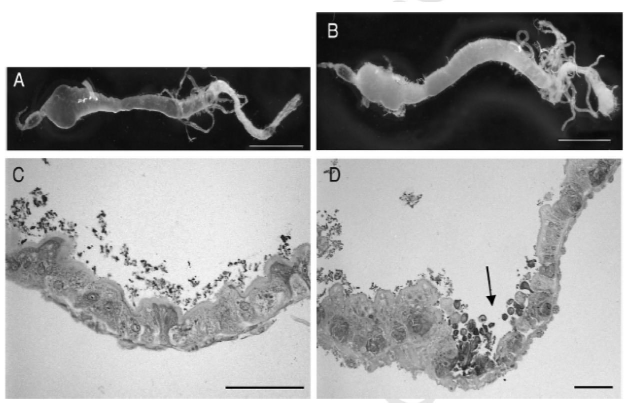


Figure 9 Morphological and histological analysis of the gut from RNAi-mediated AgraCHS2 silenced *A. grandis*. (A and B) Gut morphology. Guts were dissected 5 days after microinjection of GUS dsRNA or AgraCHS2 dsRNA, as indicated. (C and D) Gut histology. Bright-field images of transversal sections of the gut stained with toluidine blue from *A. grandis* microinjected with either GUS dsRNA or AgraCHS2 dsRNA, as indicated. In (D), the arrow points to damaged tissue in the midgut due to AgraCHS2 RNAi-mediated gene silencing. Scale bars in (A and B) = 2 mm and in (C and D) = 100 μm.

frontiers in Physiology

ORIGINAL RESEARCH
published: 28 April 2017
doi: 10.3389/fphys.2017.00256

Investigating Engineered Ribonucleoprotein Particles to Improve Oral RNAi Delivery in Crop Insect Pests

François-Xavier Gillet[1*†], Rayssa A. Garcia[1,2†], Leonardo L. P. Macedo[1], Erika V. S. Albuquerque[1], Maria C. M. Silva[1] and Maria F. Grossi-de-Sa[1,3*]

[1] Embrapa Genetic Resources and Biotechnology, Brasília, Brazil, [2] Department of Cellular Biology, Brasilia Federal University (UnB), Brasilia, Brazil, [3] Graduate Program in Genomics and Biotechnology, Catholic University of Brasilia, Brasilia, Brazil

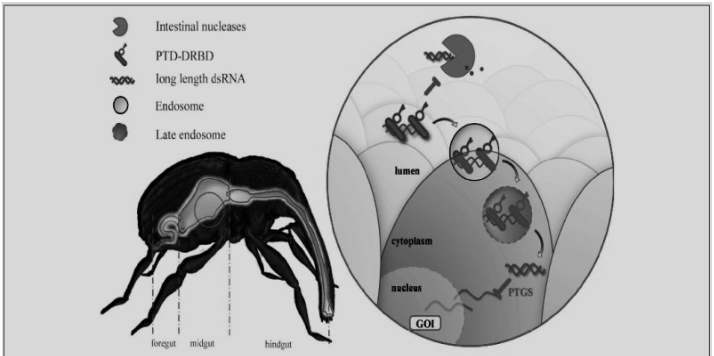
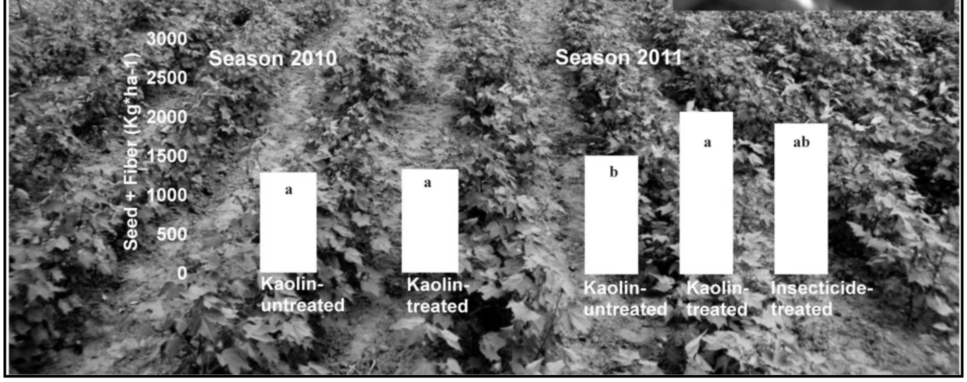


FIGURE 7 | Model for the mechanism of oral delivery of dsRNA combined with PTD-DRBD. In the midgut, PTD-DRBD (red bar with key) covers the naked dsRNA (blue helix) and limits its degradation (blue dots) by gut-secreted nucleases (pink pacman). PTD stimulates endocytosis at the epithelial cell membrane, forming endosomes (lined circled RNP) and allowing endocytosis of the RNP. Endosomal maturation leads to endosomal acidification, which activates the fusogenic peptide. The release of dsRNA into the cytoplasm triggers the silencing of the gene of interest (GOI) in a sequence-specific manner.

Rational Practices to Manage Boll Weevils Colonization and Population Growth on Family Farms in the Semiárido Region of Brazil

Insects, 2014
5(4) 818-831

Robério C. S. Neves [1], Felipe Colares [1], Jorge B. Torres [1,*], Roberta L. Santos [2] and Cristina S. Bastos [3]



Neotrop Entomol
DOI 10.1007/s13744-014-0250-9

PEST MANAGEMENT

The Effect of Protease Inhibitors on Digestive Proteolytic Activity in the Raspberry Weevil, *Aegorhinus superciliosus* (Guérin) (Coleoptera: Curculionidae)

V Medel[1,2], R Palma[3], D Mercado[1], R Rebolledo[2], A Quiroz[1], A Mutis[1]

[1]Lab de Química Ecológica, Depto de Ciencias Químicas y Recursos Naturales, Univ de La Frontera, Temuco, Araucanía, Chile
[2]Lab de Entomología, Depto de Ciencias Agronómicas y Recursos Naturales, Univ de La Frontera, Temuco, Araucanía, Chile
[3]Lab Interacciones Insecto-Planta, Instituto de Ciencias Biológicas, Univ de Talca, Talca, Chile

Chinese Academy of Agricultural Sciences

Transgenic cotton (Cry1Ac + CPTi)

Combining 1,4-dimethoxybenzene, the major flower volatile of wild strawberry *Fragaria vesca*, with the aggregation pheromone of the strawberry blossom weevil *Anthonomus rubi* improves attraction

Atle Wibe [a,*], Anna-Karin Borg-Karlson [b,e], Jerry Cross [c], Helena Bichão [d], Michelle Fountain [c], Ilme Liblikas [e], Lene Sigsgaard [f]

Crop Protection, 2014, 122-128

Thank You