AGRICULTURE
STRONGER THAN THE STORM

How the Crop Protection Industry will be STRONGER THAN THE STORM

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2025 ADJUVANTS, INERTS & CROP PROTECTION CONFERENCE

cpda

What is the Storm ?

The inevitable combination of economic, regulatory, technical, social and media events that question and change the way our industry does business.

The Storm: Past, Present & Future

History is a continuum of Past, Present and Future. Perhaps in our prior experiences we can gain a glimpse into the future.

"IT'S TOUGH TO MAKE PREDICTIONS, ESPECIALLY ABOUT THE FUTURE"

YOGI BERRA

The Raft of the Medusa

Théodore Géricault
1819

The Great Cranberry Scare of 1959

- In 1959, a cranberry scare affected consumer perceptions.
- A pesticide residue was found in cranberries, causing panic.
- Health officials worked quickly to reassure the public.
- The scare led to significant financial losses for growers.
- The incident prompted stricter regulations on pesticide use.

The Great Cranberry Scare Off 1959

Children's Book Fair Section Today

The Washington Post

Cranberry Shipment Is Seized by Chicago

Prisoner Killed, Officer Injured In Fight at Jail

Rockefeller Hedges Nixon-Cox Win View

The first instance of "The Delaney Clause" being invoked

1962 Best Seller by
Rachel Carson
A watershed moment
in environmental and
pesticide history

'Silent Spring' Is Now Noisy Summer

Pesticides Industry Up in Arms Over a New Book

By JOHN M. LEE

The $300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.

The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and

Rachel Carson Stirs Conflict—Producers Are Crying 'Foul'

fending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.

A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.

Miss Carson's new book is entitled "Silent Spring." The

Silent Spring

Silent Spring: A Call to Action

- Published in 1962 by Rachel Carson.
- Highlights the dangers of pesticide use.
- Raises awareness about environmental impact.
- Pioneered the environmental movement.
- Encouraged regulatory changes for pesticide control.
- Loss of DDT

SILENT SPRING

ALAR

A PGR used in apple management – gave positive fruit appearance and managed harvest schedules

Breakdown product was shown to be carcinogenic

In 1989 this came to a head

ALAR

The rise of Celebrity Activists

ALAR

Reaction was swift – apples sales fell dramatically
Some growers went bankrupt
No matter how small the risk, the effect was huge
The beginning of Green Consumerism
Beginning of the end for Uniroyal Chemical, eventually absorbed into
Chemtura
Power of media magnified

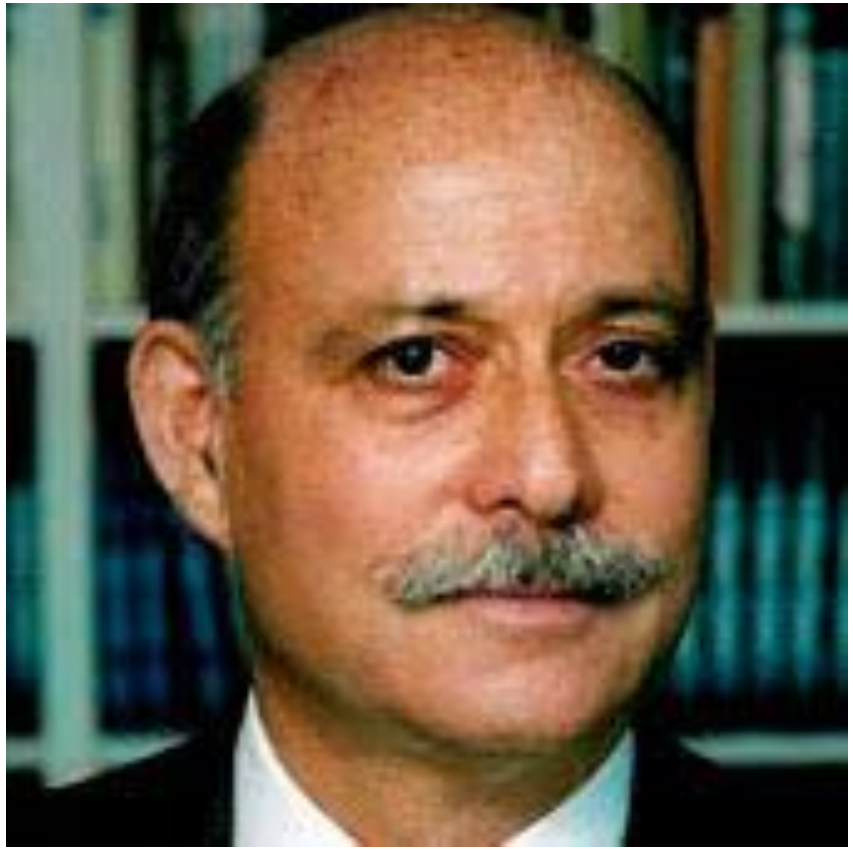
ROUNDUP READY

Imidazolinone resistant waterhemp exploded in 1992-1994 era . Products such as Pursuit were the preferred POST herbicide in soybean – until they weren't

As it turned out, Roundup Ready was the cavalry charging over the hill for soybean growers

Roundup Ready soybeans were a major advancement in weed control – effective, easy to use

ROUNDUP READY



Do you recognize this man?

Mid 90's Luddite
Jeremy Rifkin

Led effort to ban GMO crops

ROUNDUP READY

The Rifkin campaign did not stop Roundup Ready
It did engender a huge amount of animosity toward Monsanto which persists til this day

The legacy is the huge judgements against Monsanto/Bayer.
There were two industry casualties here – AmCy went out of business after imidazolinones collapsed and Monsanto disappeared under lawsuit pressures.

ROUNDUP CRISIS

- Multiple lawsuits maintain Roundup herbicide is/was carcinogenic
- Sympathetic juries awarded outrageous sums to plaintiffs
- Monsanto, an Industry Giant, is brought low and acquired by Bayer
- Bayer is humbled in court
- Roundup glyphosate is rumored to be discontinued

BIT BENZOISOTHIAZOLINONE

BIT is the preferred biocide in water based formulations – paints, inks, SC formulations

July 2018 Chinese government shuts down industrial park where BIT precursor made after environmental audit

BIT benzoisothiazolinone

- August 2018 – CPDA notifies EPA of impending supply crisis
- CPDA/CLA work together to produce alternatives to BIT
- October 2018 list submitted to EPA
- December 2018, list approved and signed the day before government shutdown
- Crisis averted

BIT

BENZOISOTHIAZOLINONE

March 2019 the industrial park where the BIT precursor was made is destroyed in an explosion

2.2 on the Richter scale

There will be no precursor – BIT supply is totally cut off

BIT

The actions of CPDA/CLA to convince EPA of the reality of the crisis was critical

Working with EPA a very doable workaround was completed in the space of a few months. This is lightning speed.

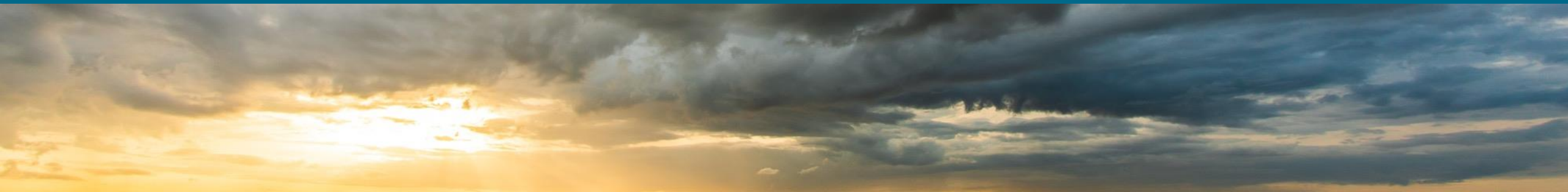
BIT

The BIT experience can serve as a template for industry/EPA action

Industry/EPA cooperation is NOT impossible. It can even happen at a rapid pace in some situations

PFAS - In the Storm

- Perfluorinated alkyl substances
- Starting material/by product/breakdown product
- These are the “FOREVER CHEMICLAS”



PFAS

C&EN
CHEMICAL & ENGINEERING NEWS

PFAS found in mosquito spray used in US states

Neighborhoods across country could face contamination from insect control

by Cheryl Hogue

DECEMBER 2, 2020 | APPEARED IN VOLUME 98, ISSUE 47

PFAS

PFAS

'Forever chemicals' may have polluted 20m acres of US cropland, study says

PFAS-tainted sewage sludge is used as fertilizer in fields and report finds that about 20m acres of cropland could be contaminated

Tom Perkins

Sun 8 May 2022 10.00 BST

About 20m acres of cropland in the United States may be contaminated from PFAS-tainted sewage sludge that has been used as fertilizer, a new report estimates.

PFAS – IN THE STORM

- Bulk of volume in firefighting foams (makes heat resistant foams)
- In ag, main sources could be fluorinated jugs leaching PFAS into products
- Fluorinated jugs are very useful for long shelf life of solvent containing products
- Controversial

PFAS – IN THE STORM

- Response
  - Fluorinated surfactants dropped
  - PFAS free jugs under development
    - Some problems are being overcome
  - Probability of success is high

MAHA

RFK Jr is on crusade to improve health outcomes

- Synthetic food colorings – gone!
- Pharmaceutical incipients next!
- Can inert ingredient be far behind???
  - Actually no – no statutory authority overt inerts
  - Exempt from tolerance

MAHA

Pesticides are an emotional target

FDA does not have authority to regulate tolerances – EPA domain

Does have authority to regulate residues in foods

Expect more testing and more scare stories

NGO's love to find glyphosate residues in oat based cereals

MAHA

This is here and now.

TARIFFS

- The latest and greatest challenge
- Most generic pesticides come from China and to a lesser extent India
- Even if AI's are exempted from highest tariffs, the base tariffs will still increase cost

- It is likely that costs will increase unless a US/China trade deal is reached

TARIFFS

- Supply chains must/will adapt
- Alternate non-China sources
- On shoring
- What will happen with glufosinate and glyphosate??

LESSONS?

From 1959 to 2025 what are some lessons we can to guide future challenges?

- There will always be hostile media
  - Books, newspaper articles, television
- Personalities will seek and gain attention
  - Celebrities & activists
- Government action will be perennial, ongoing, often hostile, often slow

LESSONS

- ***Change Happens (always and everywhere)***
  - Embrace Change for the better
  - Flexibility
  - Dangers of holding on too long
    - Loss of market share to new things
    - Pesticides, adjuvants, fertilizers,seeds

STRATEGIES

- Don’t be addicted to old things (In spite of threat to sales)
  - Is that last pound of nitrogen really necessary? Will it increase yield or sales?
  - Is the cheapest product always the best?

STRATEGIES

5 years ago concepts like biological N fixation to reduce fertilizer use, biostimulants, microbials to reduce abiotic stress and others may have seemed like science fiction. Today these products are everywhere

STRATEGIES

- Get Involved
  - CPDA is your way into the system
    - Washington Fly-In – invest your time
    - PAC – invest your dollars
    - Effective action at WSDA (an early example)
- If you aren't at the table, you are on the menu

STRATEGIES

Whether you know it or not, whether you care or not, **YOU** are a part of the future

SURVIVING THE STORM

THANK YOU
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