

# Path to Seed Citizenship

1. Your Scenario
2. Seed Steward
3. Seed Exchange
4. Seed Library
5. Seed Bank
6. Seed Business

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

# Seed-Saving: A Brief History



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

- Colonial times: seed production mainly with wealthy landowners
- They could afford to import and adapt seed for New World's growing environment.
- Many of these landowners — Thomas Jefferson and George Washington among them — formed agricultural “societies.”

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

**“The greatest service which can be rendered to any country is to add a useful plant to its culture.”**

**- Thomas Jefferson**

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

In 1839, the commissioner of patents, Henry Ellsworth, secured funding from Congress to collect and distribute agricultural seed.

Ten years after it started, the Patent Office sent out 60,000 packages of seed annually by the U.S. Postal Service.

By 1855, the office had shipped out over 1 million seed packages.

# 1850 - Patent and Trade Office - Free Seeds



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

The successor to this  
Patent Office free seed  
program was the  
USDA.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

When it was founded in 1862, one of the USDA's primary purposes was the procurement, propagation and distribution of new and valuable plant varieties to farmers across America (the majority of the population at the time). Thirty percent of its budget was devoted to collecting and distributing seed.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

Fifteen years after it was established, one-third of the entire USDA budget was devoted to the free seed distribution program.



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

Many seed companies began forming during this time



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

Significant obstacles faced  
the private seed industry.

The government's free  
seed program was the  
biggest barrier.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

At the beginning of the 20th century, the refocusing of Mendel's work on heredity led to the hybridization of seed corn.



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

With hybridization,  
there was some built-  
in protection for those  
who performed the  
research.

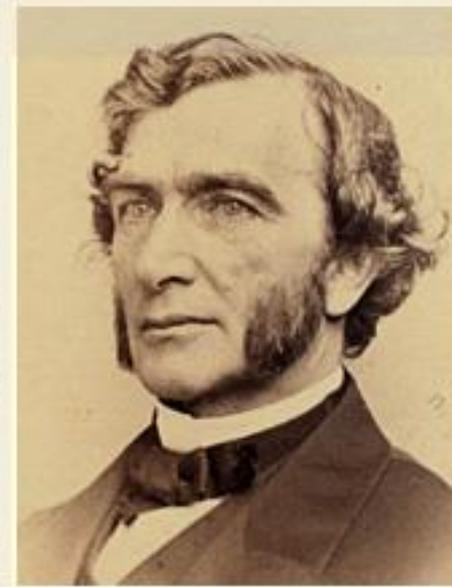
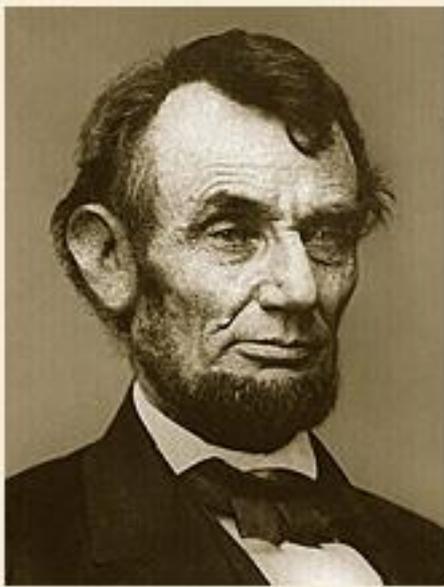
Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

# Lincoln signs the Morrill Act in 1862

Thirty-Seventh Congress of the United States of America;

At the Second Session,

Began and held at the city of Washington, on Monday, the Second day of December, one thousand eight hundred and sixty-two.



## AN ACT

to amend an Act entitled "An Act to provide for the sale of the public lands in the several States and Territories for the purpose of promoting agriculture, mechanics arts,

Representatives of the United

States for the purpose

proportioned to each State

and representative

Government under

original lands shall

the provisions of this act, and it shall be, it further enacted, that the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections, not less than one quarter of a section, and whenever there are public lands in a State, subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands

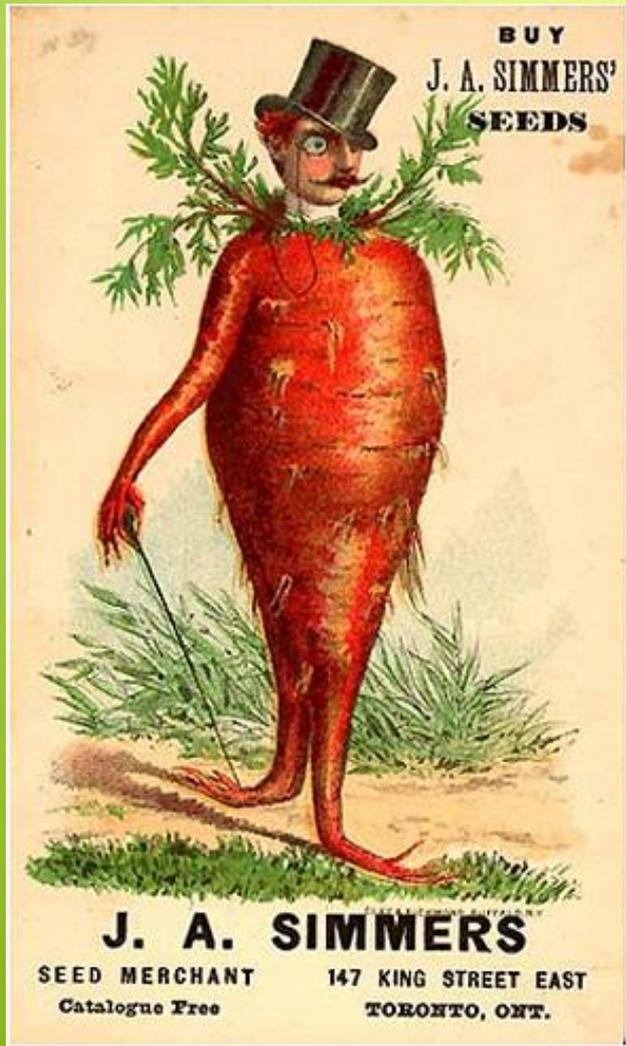
- 1883: American Seed Trade Association forms.
- Members were private seed companies that came together to promote their interests before Congress.
- A primary goal was to stop the government's free seed distribution program.
- Ultimately, in 1924, they succeeded when the USDA seed program was terminated.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance



# Re-cap:

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance



- **1861** The Patent and Trade Office had annual distribution of more than 2.4 million packages of seed.
- **1866** The first commercial seed crop, cabbage seed, produced on Long Island for the U.S. wholesale market.
- **1883** American Seed Trade Association (ASTA) formed and immediately lobbied for the cessation of the government programs.
- **1897** 1.1 billion packets of seed distributed via USPS

Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

Copyright and Patent Laws began to change in 1923, but still, seed still belonged to all and no one could patent seed. Farmers could save and share.



Beth Bridgeman, Antioch College, adapted from  
Bill McDorman, Rocky Mountain Seed Alliance

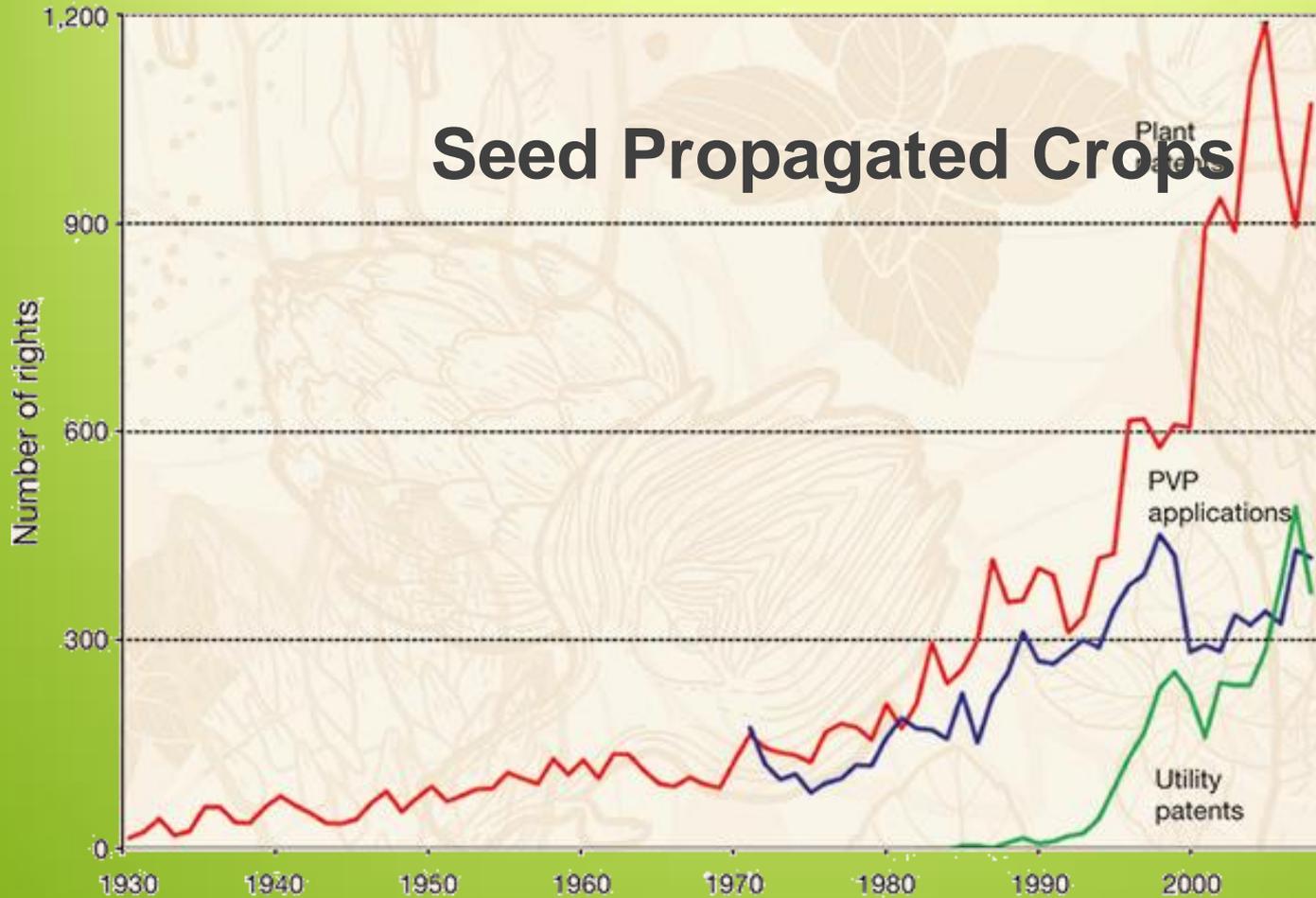
# 1930 - The Plant Patent Act



## Asexually Reproduced Plants

Beth Bridgeman, Antioch College, adapted from  
Bill McDorman, Rocky Mountain Seed Alliance

# 1970 - The Plant Variety Protection Act



Beth Bridgeman, Antioch College, adapted from  
Bill McDorman, Rocky Mountain Seed Alliance

# 1980 – Diamond v. Chakrabarty

447 U.S. 303



**“The fact that micro-organisms are alive is without legal significance.”**

**“Anything under the sun made by man can be patented.”**

Beth Bridgeman, Antioch College, adapted from  
Bill McDorman, Rocky Mountain Seed Alliance

# 1986 – The Coordinated Framework for Regulation of Biotechnology



**“...would focus on  
product, not process, of  
genetic modification  
...Only regulation  
grounded in verifiable  
risks would be  
tolerated.”**

Beth Bridgeman, Antioch College, adapted from Bill  
McDorman, Rocky Mountain Seed Alliance

# 1986 – The Coordinated Framework for Regulation of Biotechnology

It was “expected to evolve in accord with the experiences of the industry and the agencies, and, thus, modifications may need to be made through administrative or legislative actions.”

Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

# 1992 – Update to Coordinated Framework



**“...no new laws would  
be passed to regulate  
biotechnology...  
...existing statutes are  
sufficient to review the  
products...”**

Beth Bridgeman, Antioch College, adapted from Bill  
McDorman, Rocky Mountain Seed Alliance

# 2017 Update to Coordinated Framework



Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

# Important Legal Moments

- 1930 The Plant Patent Act – clonal
- 1970 The Plant Variety Protection Act - seed propagated crops.
- 1980 U.S. Supreme Court - allow genetics in a plant to be patented.

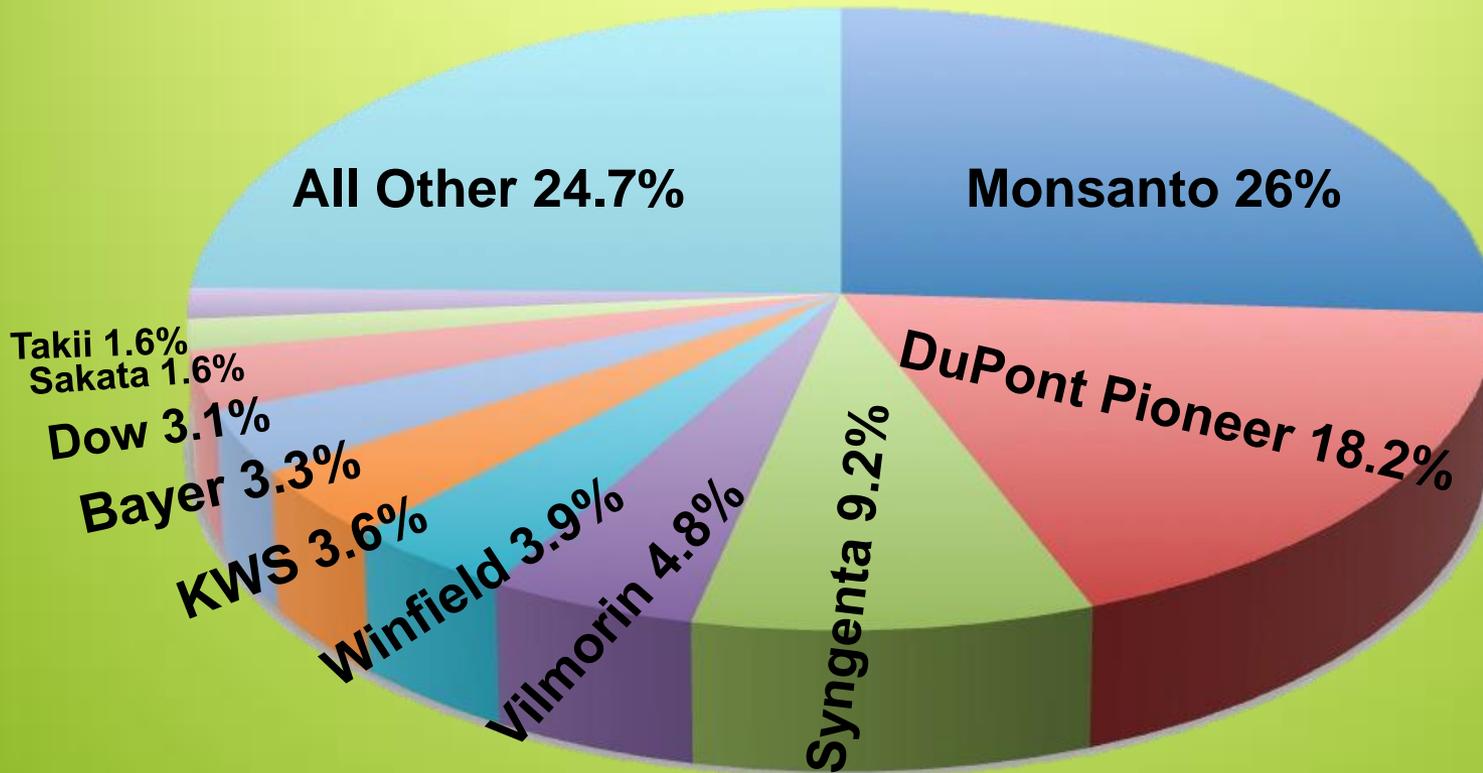
Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

# Important Legal Moments cont.

- 1992 The Coordinated Framework - no new laws would be passed to regulate biotechnology.
- 2000 Utility patent protection extended to plants.

Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

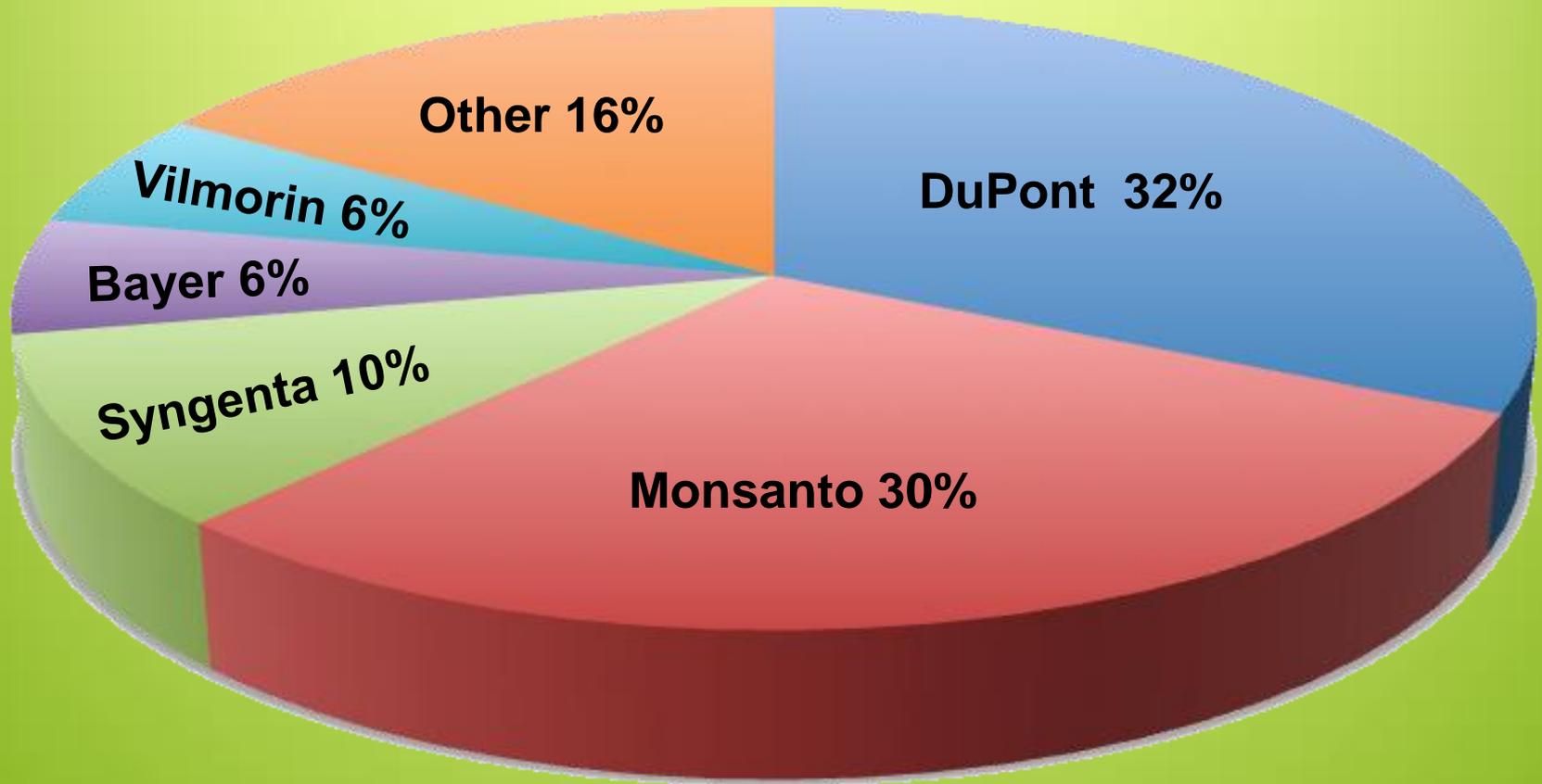
# World's Top 10 Seed Companies, 2011



3 companies control more than half (53%) of the global commercial market for seed. The top 10 companies account for 73% of the global market (up from 67% in 2007).

<http://map.seedmap.org/threats/industrial-agriculture/corporate-control-of-food/who-owns-seeds/>

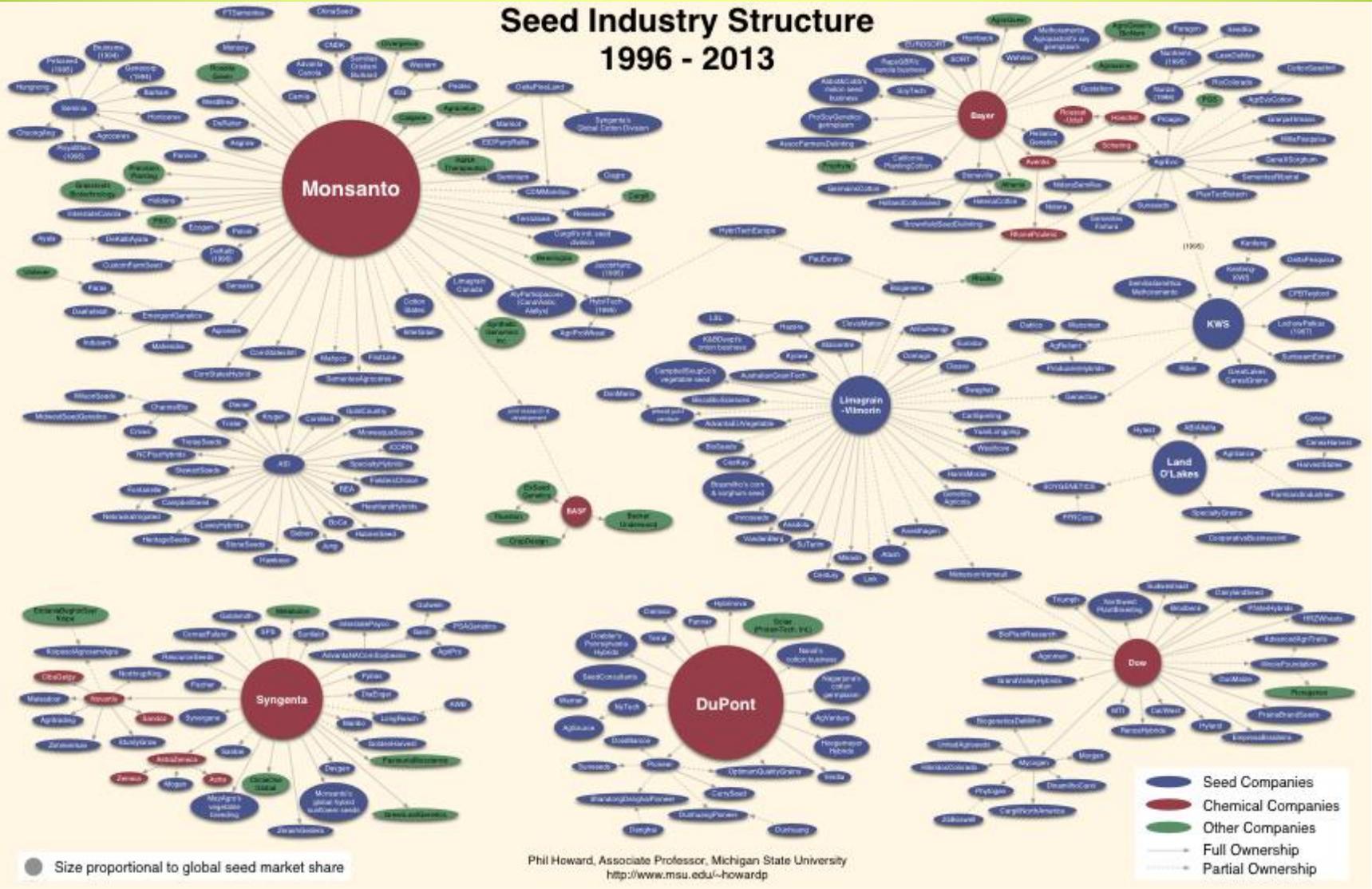
# 2012: 3 Companies Control 72%



## 2012 Global Commercial Seed Market

Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

# Seed Industry Structure 1996 - 2013



Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

## Consolidation continues:

- In July, Chemchina purchased Syngenta
- Bayer is in process of purchasing Monsanto

More and more, seeds are patented and can't be legally saved.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

The six largest agrichemical seed industry giants are also pesticide manufacturers. They have a dangerous chokehold on the global agricultural research agenda. They accounted for 76% of total private sector research and development (R&D) spending in the seed sector and 76% in the agrochemical sector in 2010.

<http://map.seedmap.org/threats/industrial-agriculture/corporate-control-of-food/marginalization-of-public-sector-agricultural-research/>

These companies devote, on average, at least 70 per cent of all seed and crop R&D in pursuit of biotech and genetic engineering. Why? GE seeds, particularly herbicide tolerant seeds, are the growth engine for the pesticide industry.

<http://map.seedmap.org/threats/industrial-agriculture/corporate-control-of-food/marginalization-of-public-sector-agricultural-research/>

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

In the US, the number of ***public sector*** breeders working on fruit and vegetable crops declined by 43 per cent from 1994 to 2001.

<https://nifa.usda.gov/sites/default/files/resource/Public%20Sector%20Plant%20Breeding%20Resources%20in%20the%20U.S..pdf>

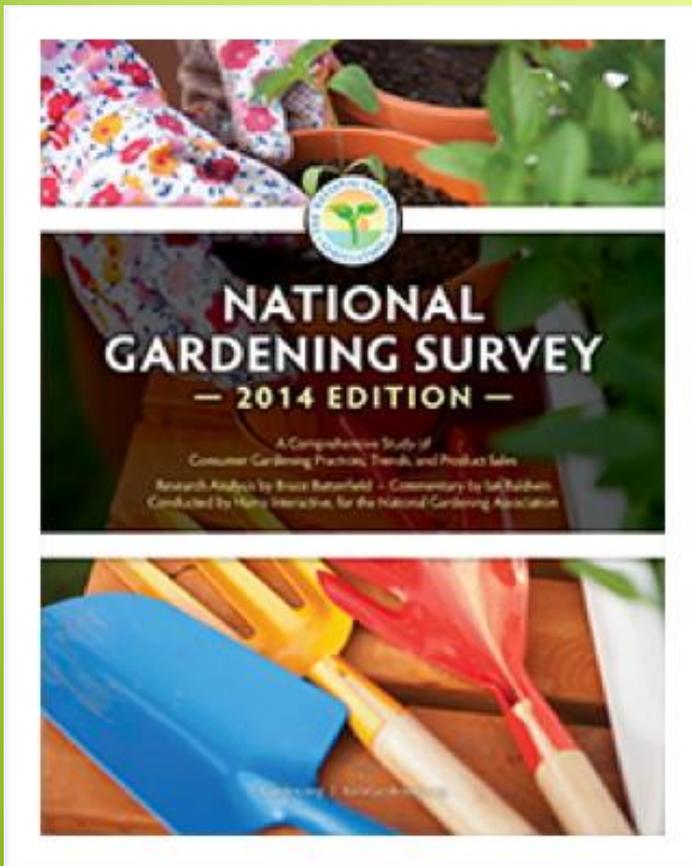
Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

In 2007, the combined agricultural R&D budgets of the “Big Six” firms was over nine times higher than the crop science R&D spending by the USDA’s Agricultural Research Service, and at least 23 times higher than the R&D spending at international crop breeding institutes under the umbrella of the Consultative Group on International Agricultural Research (CGIAR)

[http://www.seedsavers.org/site/pdf/HeritageFarmCompanion\\_BigSix.pdf](http://www.seedsavers.org/site/pdf/HeritageFarmCompanion_BigSix.pdf)

Beth Bridgeman, Antioch College, adapted from Bill  
McDorman, Rocky Mountain Seed Alliance

# Seed Sales Overview, 2012



- Commercial world seed market: \$47 billion.

“line 8 ft. long”

---

- U.S. seed market: \$12 billion. “line 2 ft. long”
- 

- Organic and new small company Seed Sales: approx. \$100 million+  
“1/5 of an inch”

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

# Food Today

The monoculture productivist model has contributed to the loss of roughly three-fourths of plant genetic diversity since the 1900s. So today, **just 12 plants and 5 animal species supply 75 percent of the world's food, making our sustenance unnecessarily vulnerable to climate change and disease."**

"What is Happening to Agrobiodiversity?" Food and Agriculture Organization, United Nations, Gender and Development Service, Sustainable Development Dept.2004  
<http://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf> [verified 4/25/14]

Beth Bridgeman, Antioch College, adapted from Bill McDorman, Rocky Mountain Seed Alliance

# Movement for Seed Sovereignty.

- Saving and sharing seed for security.
- Better adaptation for our region (not AAS)
- Community-building.
- Seed bank vs. seed sharing.
- Varietal increase.
- Open-pollinated, stable.

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

- Seedsaver's Exchange
- USDA National Center for Genetic Resource Preservation, Ft. Collins, Co
- ICARDA-Syria, others around the world
- Svaldbard Global Seed Vault

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance

What seed can we save?

“If it is patented, it has to say so in the catalog and on the packet. No guessing. **Everything that is not labeled is not patented.** If it is patented and says "PVP" you can still save the seeds. This is a much less restrictive level of patenting (first allowed in the 1970's.) It allows farmers to continue to save their own seeds. You just can't **sell** them without coming to an agreement with the patent holder.

Some seeds are now registered with a utility patent, a much more restrictive level of control. Almost no seeds available to the gardening public have this level of restriction **YET.** And no **open-pollinated** varieties I know of.

(Bill McDorman)

Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance



“This Open Source Seed pledge is intended to ensure your freedom to use the seed contained herein in any way you choose, and to make sure those freedoms are enjoyed by all subsequent users.

By opening this packet, you pledge that you will not restrict others’ use of these seeds and their derivatives by patents, licenses, or any other means.”

# Path to Seed Citizenship

1. Your Scenario
2. Seed Steward
3. Seed Exchange
4. Seed Library
5. Seed Bank
6. Seed Business



Beth Bridgeman, Antioch College,  
adapted from Bill McDorman,  
Rocky Mountain Seed Alliance