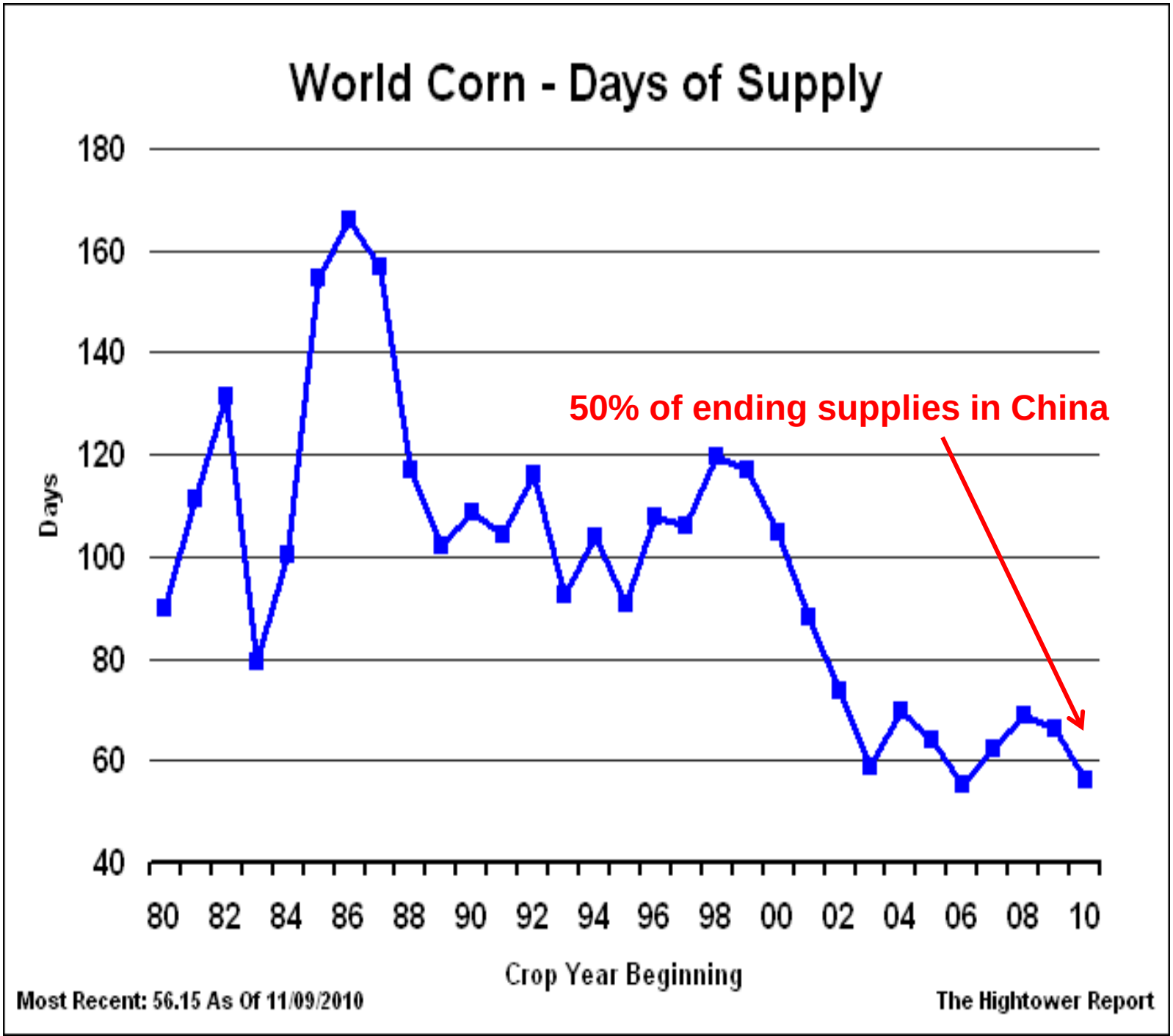
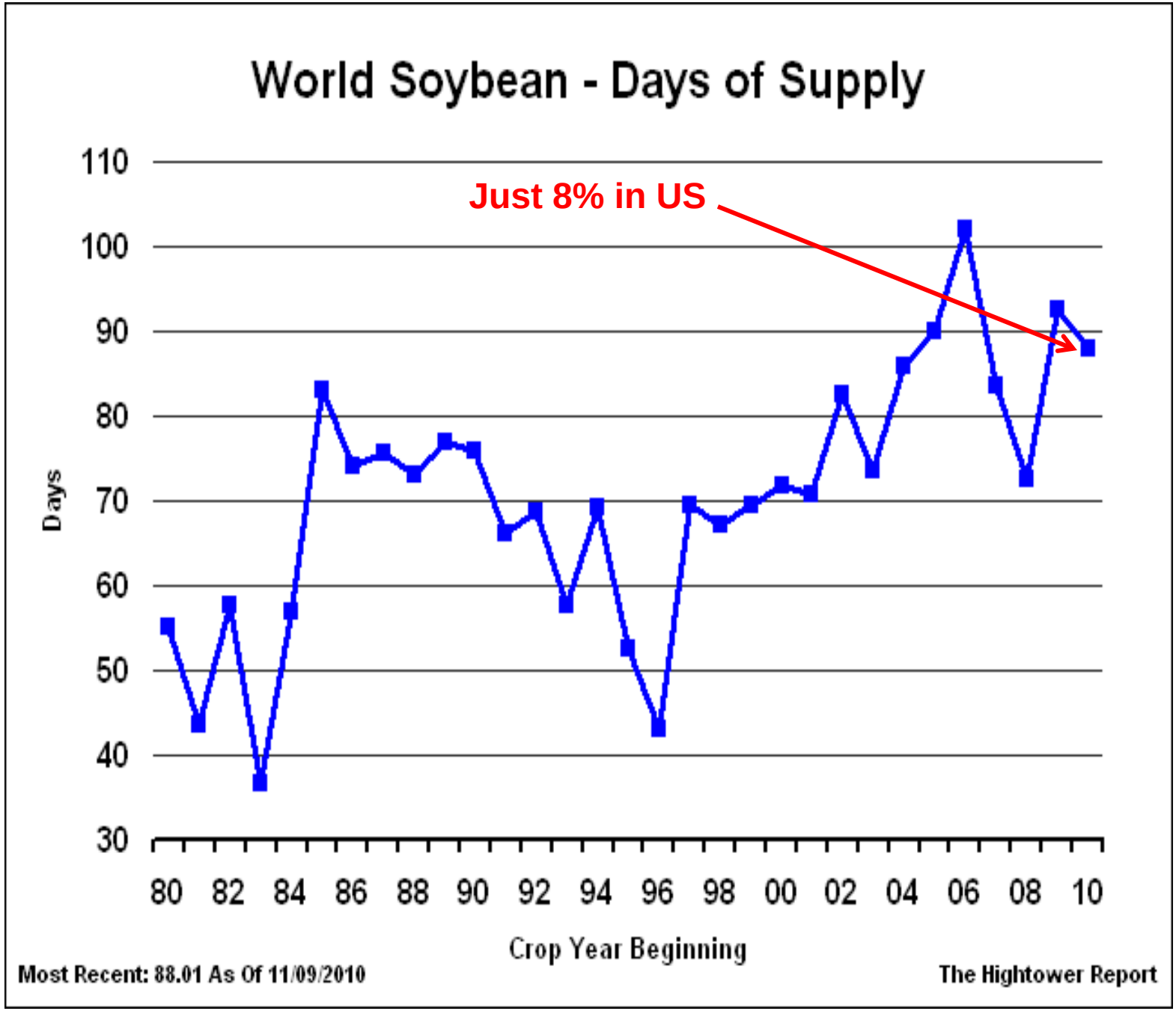
# $MONEY FARM

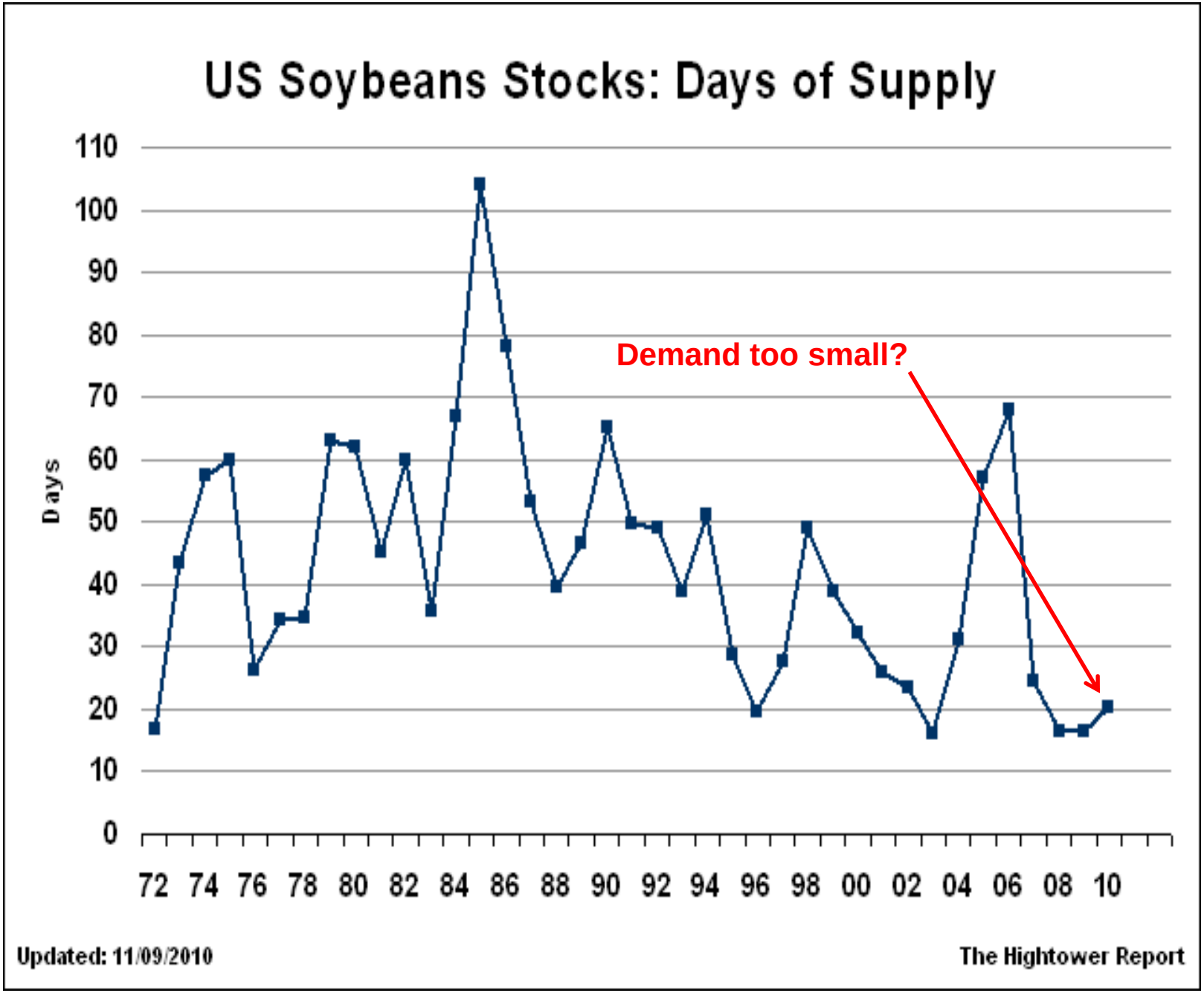

with Mike Krueger

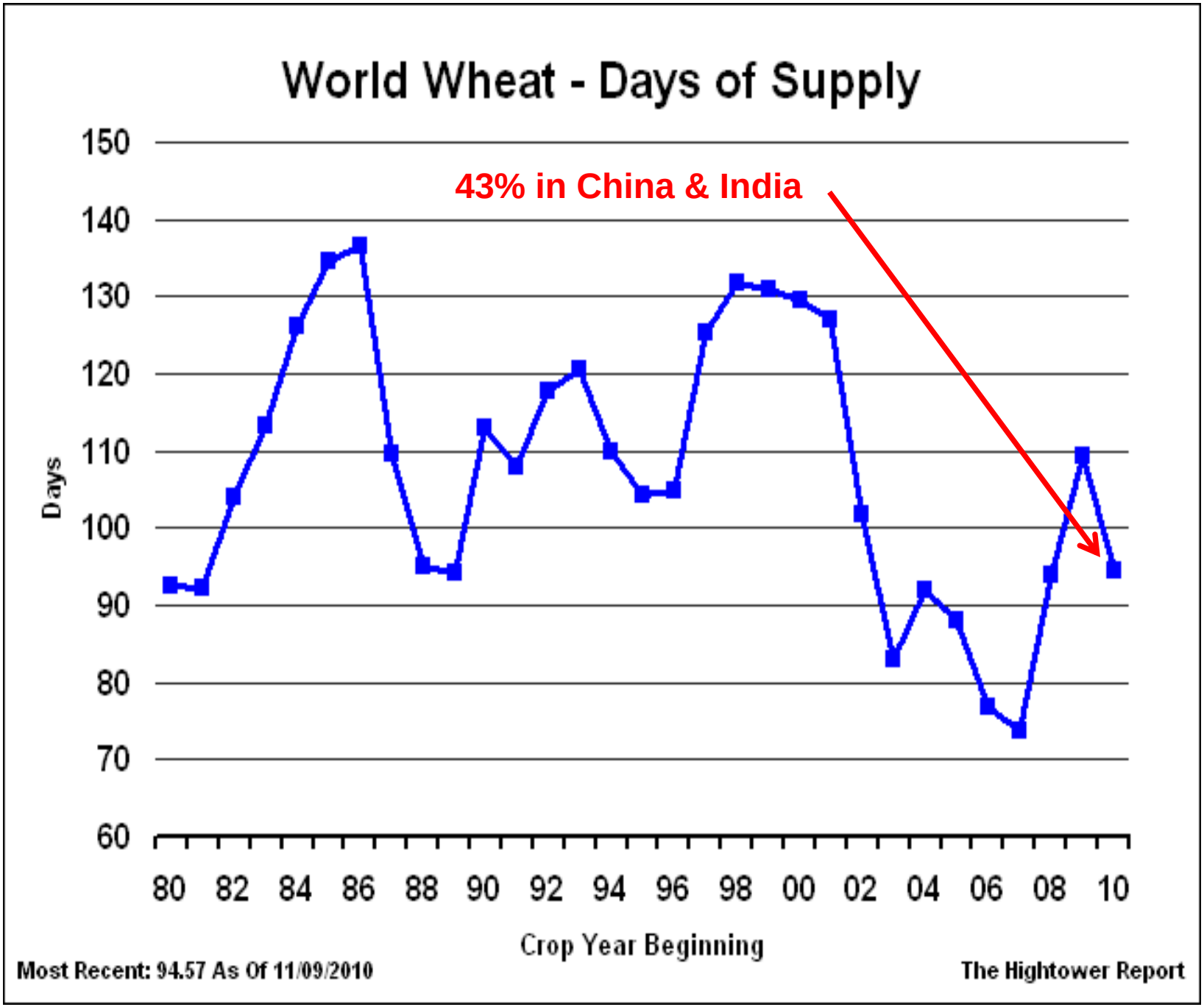
# Themes

- ***Changes in supply and demand for major grains***
- ***Big 4 Fundamental Market Forces***
  - ***China***
  - ***Russia***
  - ***Biofuels***
  - ***Biotechnology (GMO)***
- ***Implications***


World Corn - Days of Supply
180
160
140
120
100
80
60
40
Days
50% of ending supplies in China
80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10
Crop Year Beginning
Most Recent: 56.15 As Of 11/09/2010
The Hightower Report

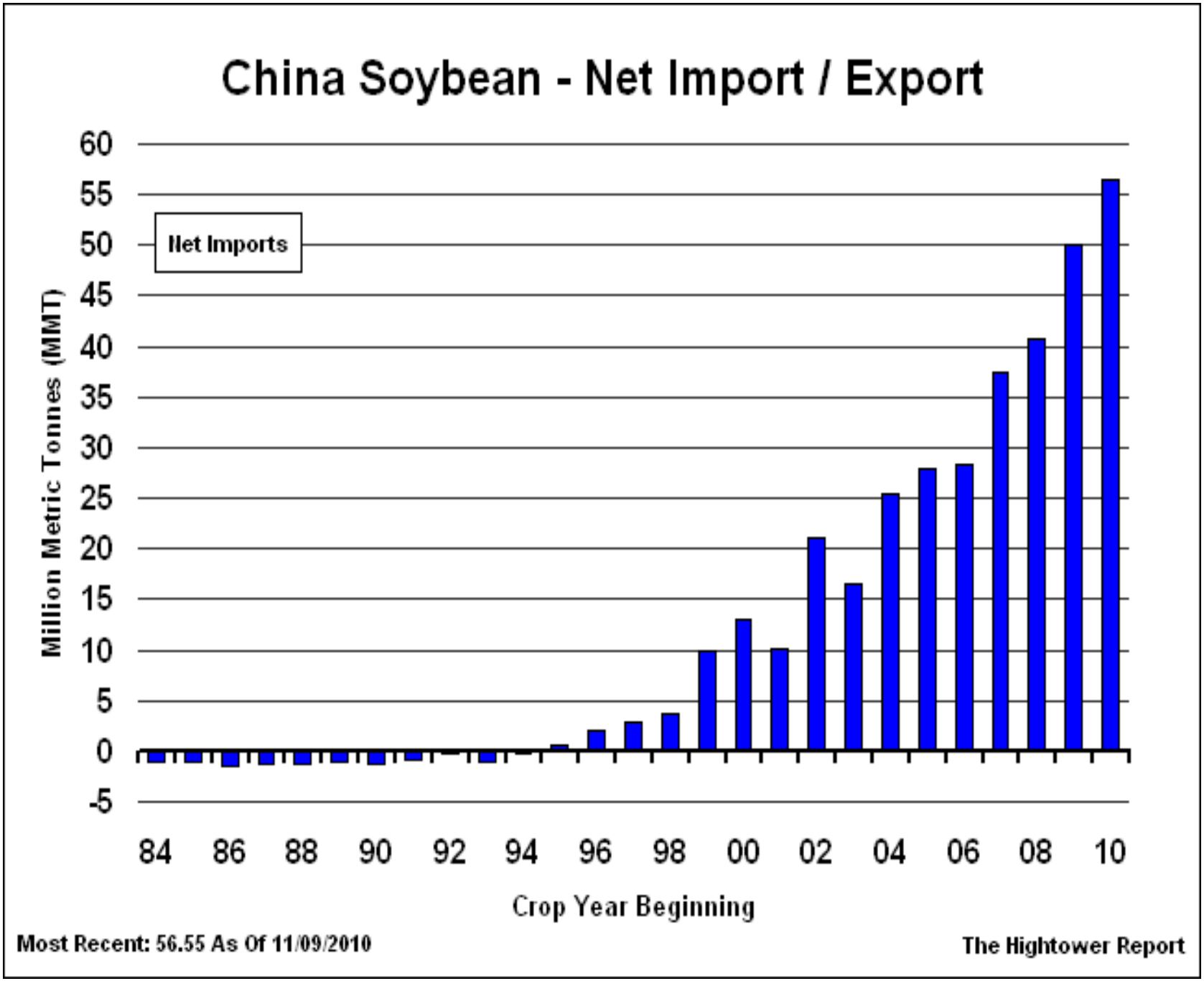

World Soybean - Days of Supply
Just 8% in US
110
100
90
80
70
60
50
40
30
Days
80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10
Crop Year Beginning
Most Recent: 88.01 As Of 11/09/2010
The Hightower Report

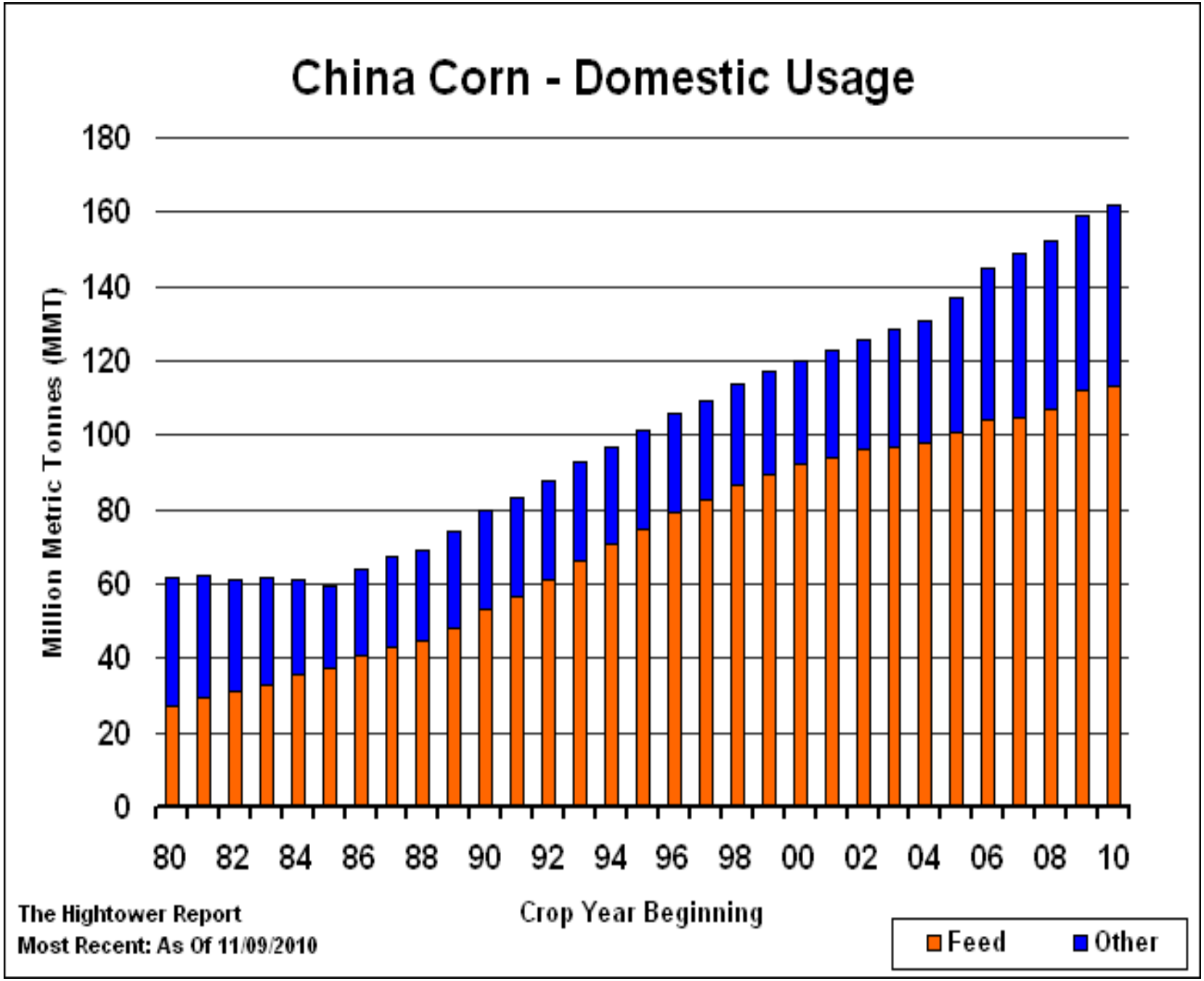

US Soybeans Stocks: Days of Supply
Days
110
100
90
80
70
60
50
40
30
20
10
0
72 74 76 78 80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10
Demand too small?
Updated: 11/09/2010
The Hightower Report

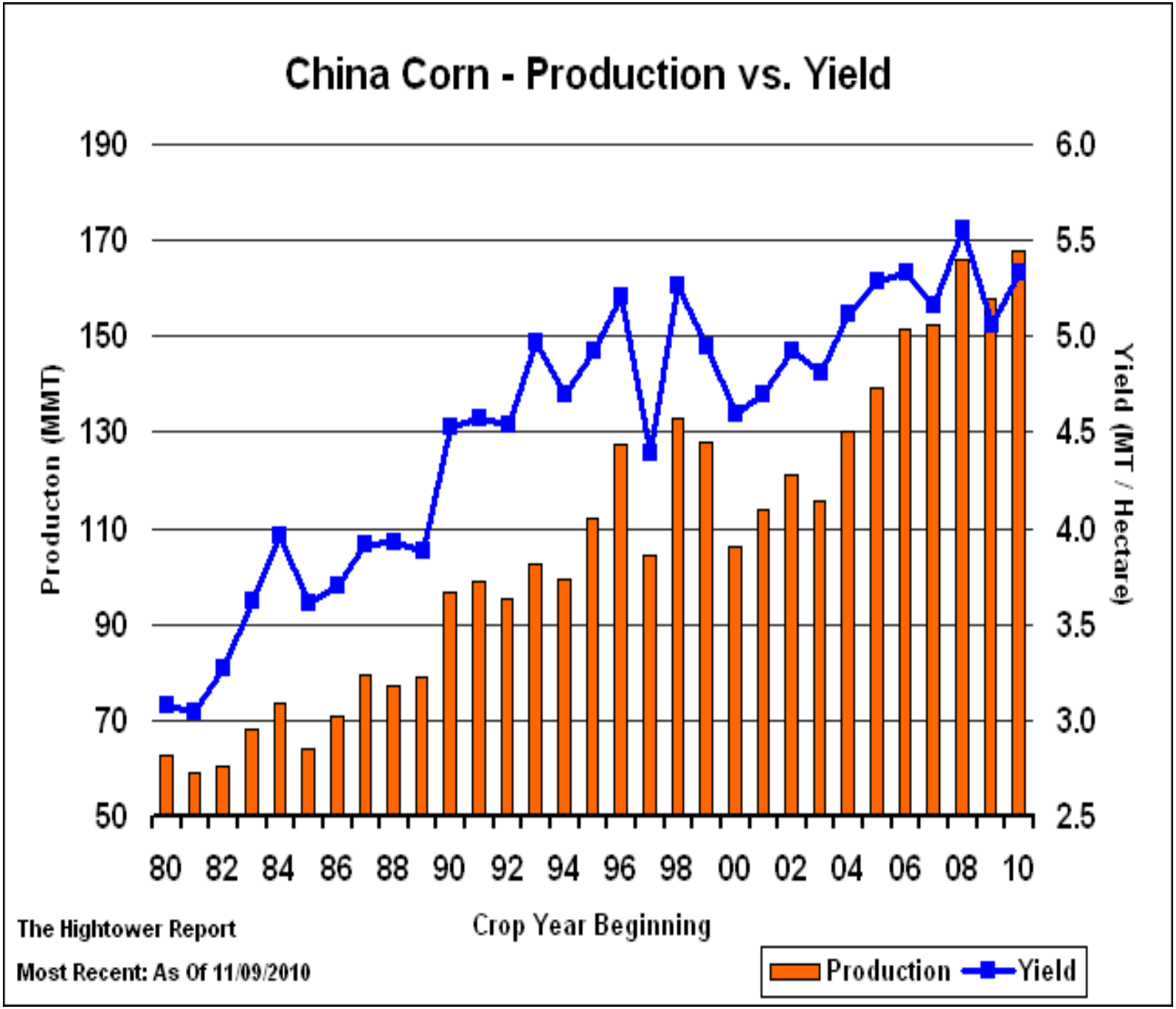

World Wheat - Days of Supply
43% in China & India
150
140
130
120
110
100
90
80
70
60
Days
80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10
Crop Year Beginning
Most Recent: 94.57 As Of 11/09/2010
The Hightower Report

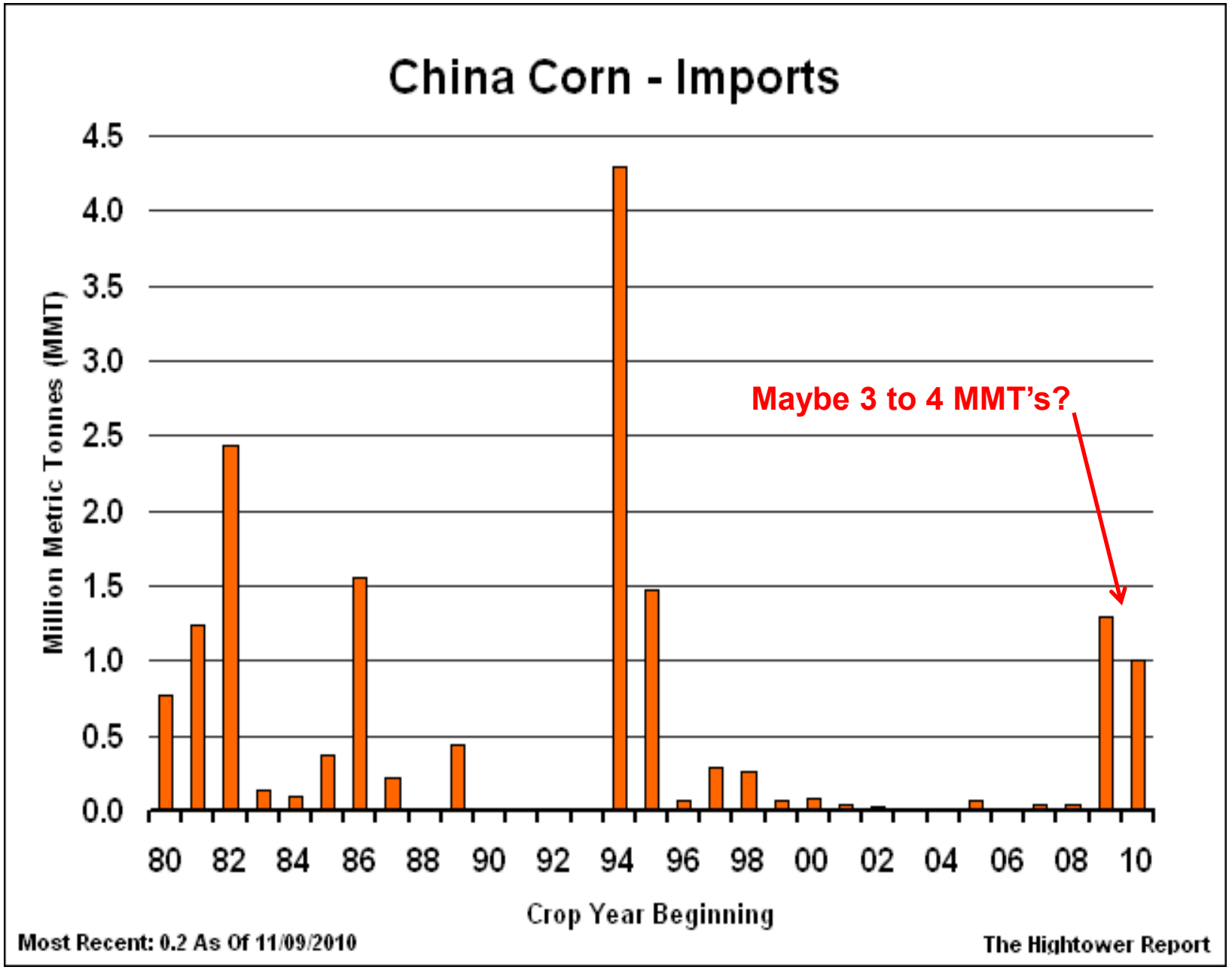
# *Demand is all about China!*

- 8% to 10% annual GDP growth
- Arable land declining
- Allows Juan to "float"?
- Conscious decision to plant wheat & corn and import soy?
- Eventual sharp increase in corn imports?


China Soybean - Net Import / Export
Net Imports
Million Metric Tonnes (MMT)
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
84
86
88
90
92
94
96
98
00
02
04
06
08
10
Crop Year Beginning
Most Recent: 56.55 As Of 11/09/2010
The Hightower Report

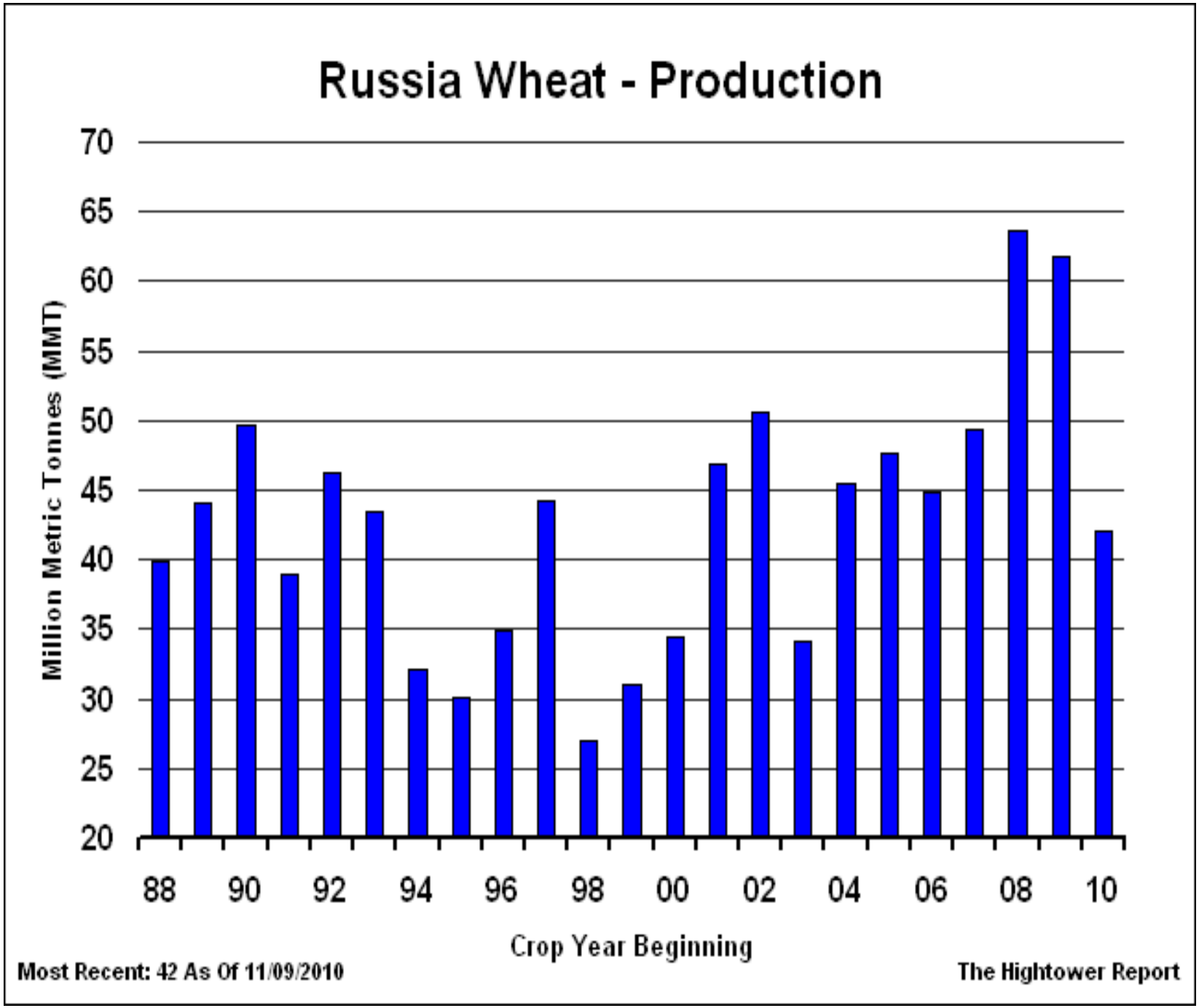

China Corn - Domestic Usage
Million Metric Tonnes (MMT)
180
160
140
120
100
80
60
40
20
0
80
82
84
86
88
90
92
94
96
98
00
02
04
06
08
10
Crop Year Beginning
The Hightower Report
Most Recent: As Of 11/09/2010
Feed
Other


China Corn - Production vs. Yield
Producton (MMT)
Yield (MT / Hectare)
190
170
150
130
110
90
70
50
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10
Crop Year Beginning
The Hightower Report
Most Recent: As Of 11/09/2010
Production
Yield


China Corn - Imports
Million Metric Tonnes (MMT)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
80
82
84
86
88
90
92
94
96
98
00
02
04
06
08
10
Crop Year Beginning
Maybe 3 to 4 MMT's?
Most Recent: 0.2 As Of 11/09/2010
The Hightower Report

# *Supply is all about Russia/FSU*

- **Can still expand acreage**
- **Can expand yields**
- **Still behind in technology**
- **Was a major force in world wheat market**
- **Reliable exporter??**

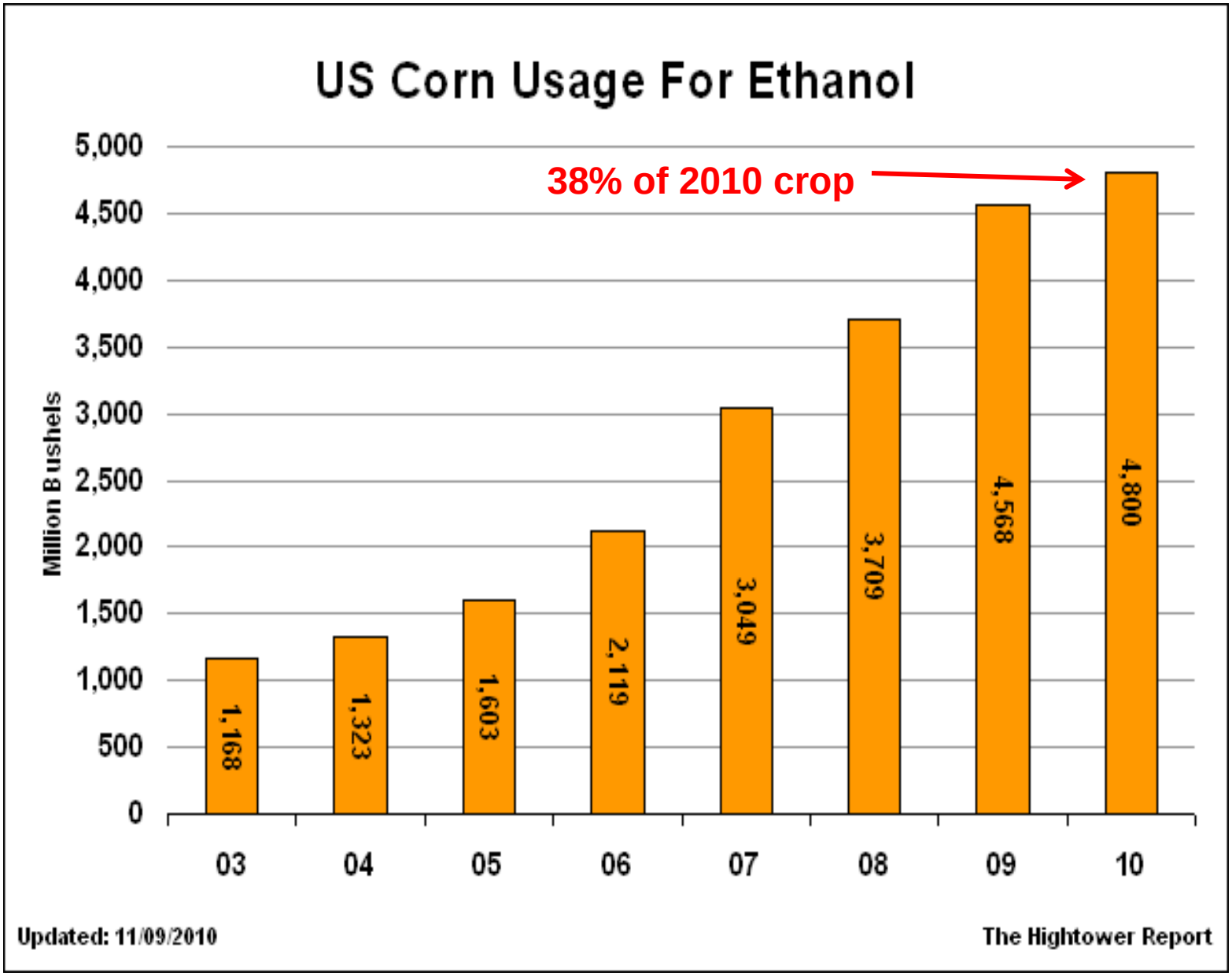

Russia Wheat - Production
70
65
60
55
50
45
40
35
30
25
20
Million Metric Tonnes (MMT)
88
90
92
94
96
98
00
02
04
06
08
10
Crop Year Beginning
Most Recent: 42 As Of 11/09/2010
The Hightower Report

# Russian Grain Production

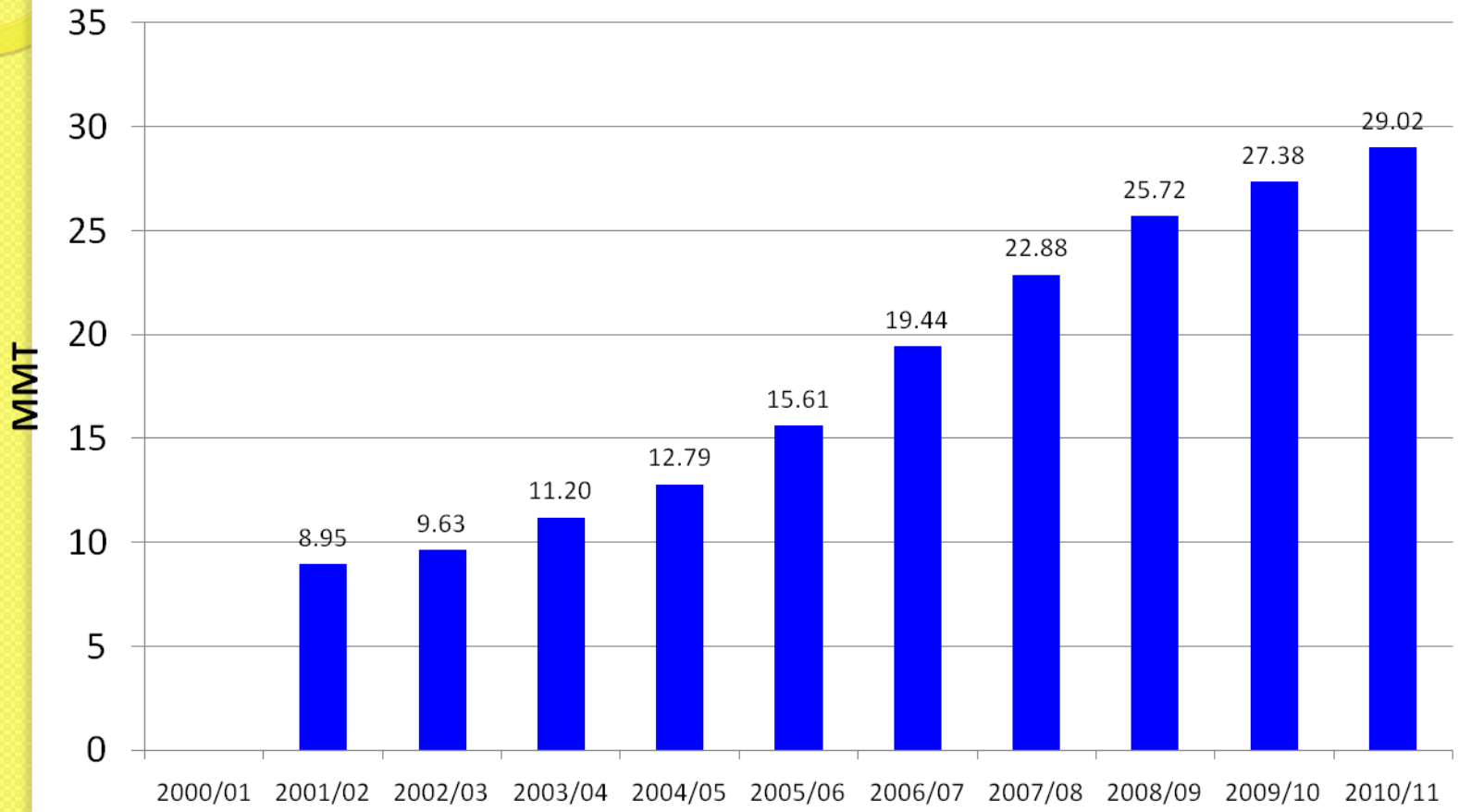
- **Expanded area for planting**
  - **Potential to increase acreage10-20% max. (one of few areas in world among current producers with prospect for expansion)**
  - **Increase yields (severely lag those from other wheat producing countries)**
- **Crop shift to corn/soybeans?**
  - **Same climate as northern plains U.S. & western Canada**
  - **These areas shifting to GMO corn, soybeans, sfs, canola**
- **Weather???**

# *Biofuels*

- U.S. Ethanol industry again profitable
- Ethanol consumption of corn still increasing
- World biodiesel production & use growing rapidly
- U.S. biodiesel industry struggling

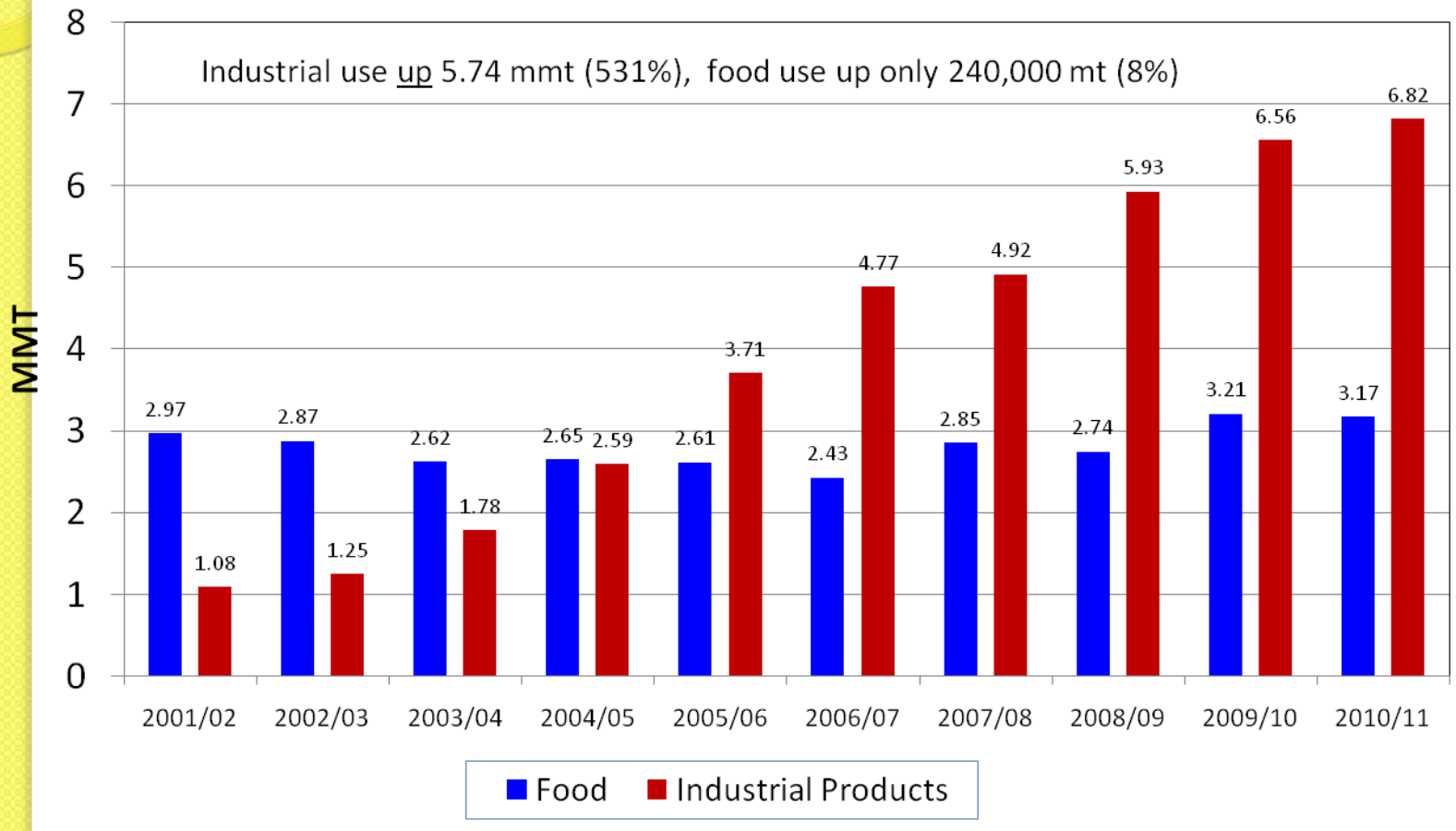

US Corn Usage For Ethanol
38% of 2010 crop
Million Bushels
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1,168
1,323
1,603
2,119
3,049
3,709
4,568
4,800
03
04
05
06
07
08
09
10
Updated: 11/09/2010
The Hightower Report

# Global Vegoil Consumption for Industrial Products Including Biodiesel



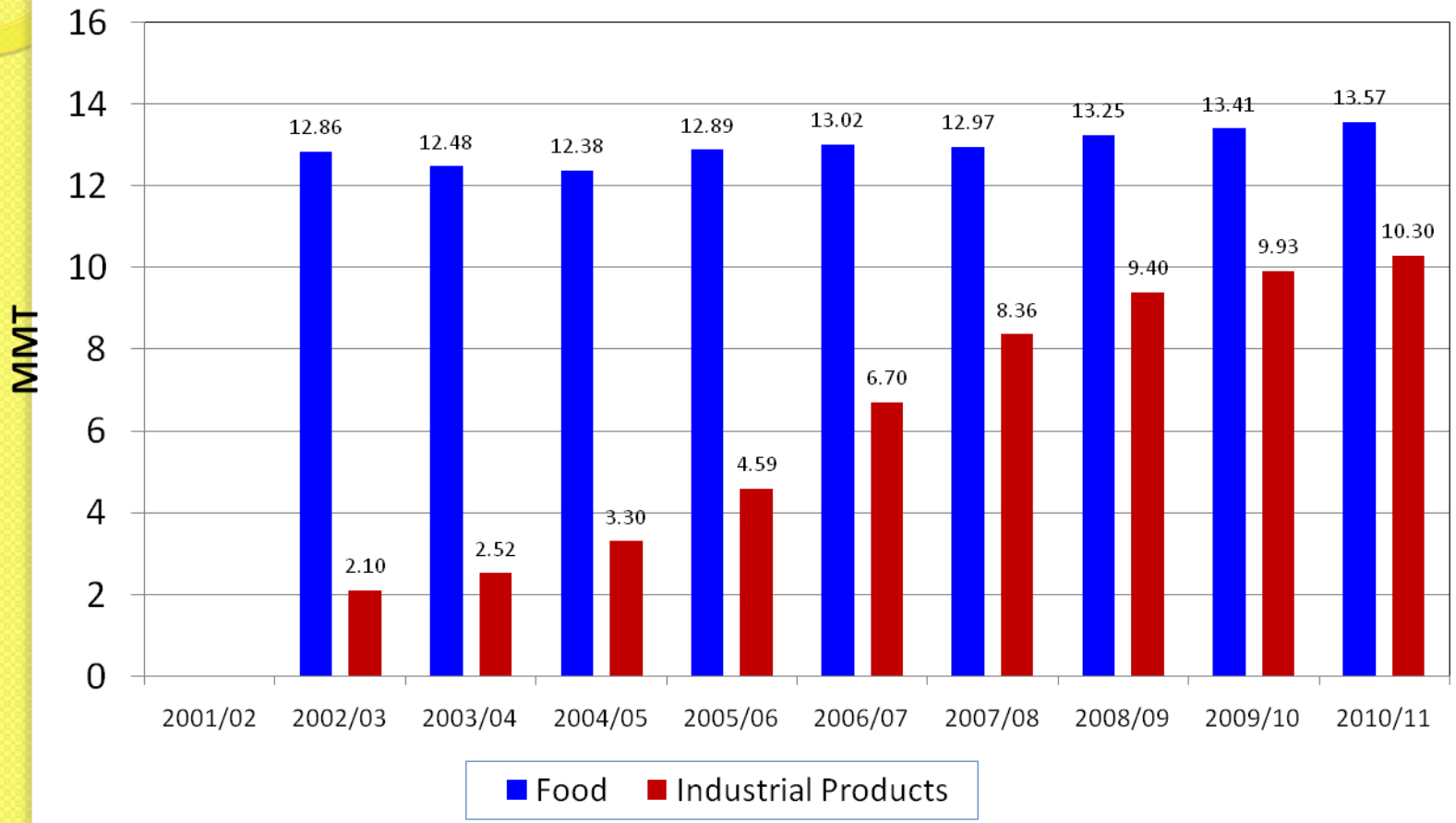
# European Union

## *Use of Rapeseed Oil for Food and Industrial Products*

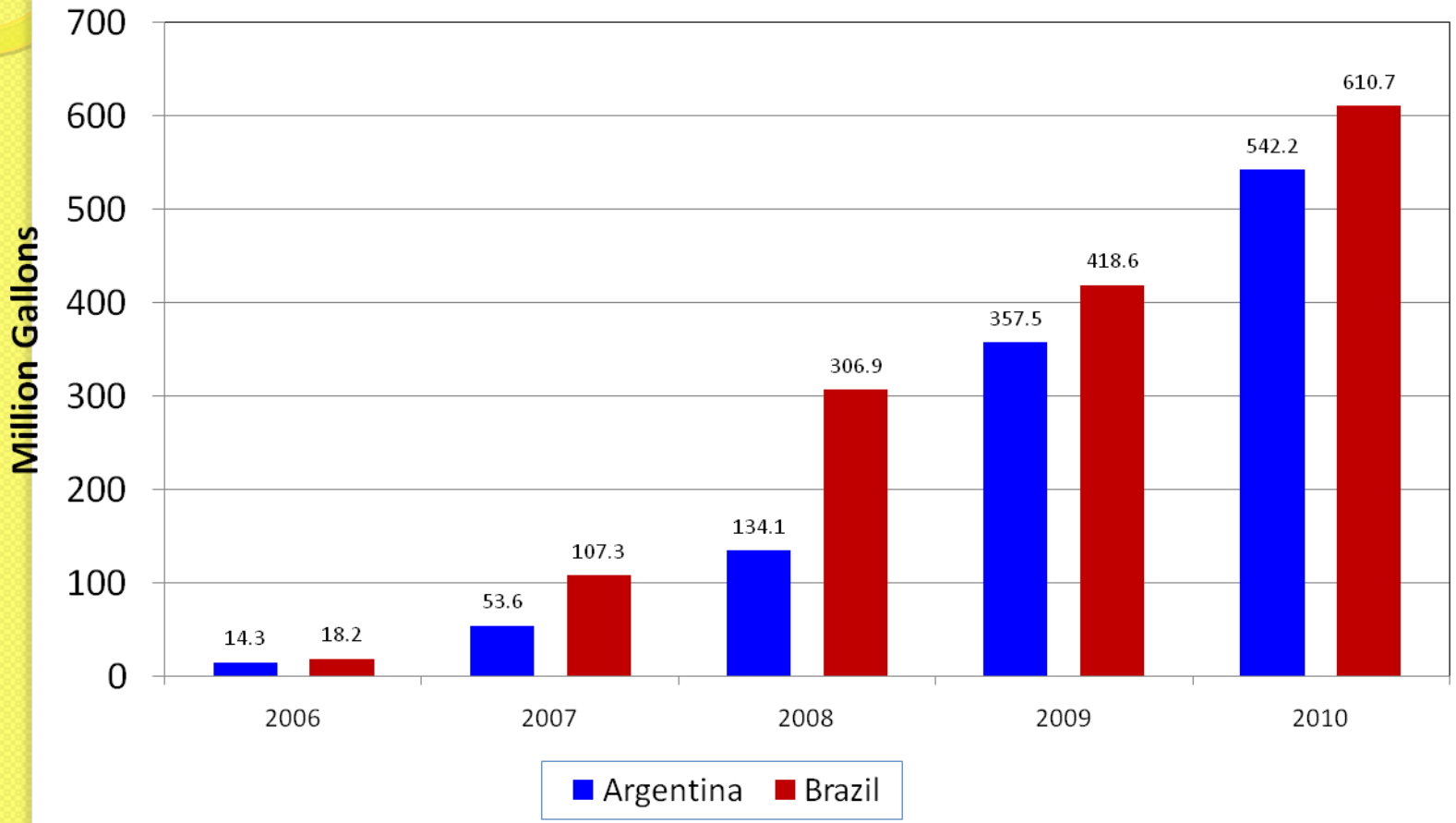


# European Union

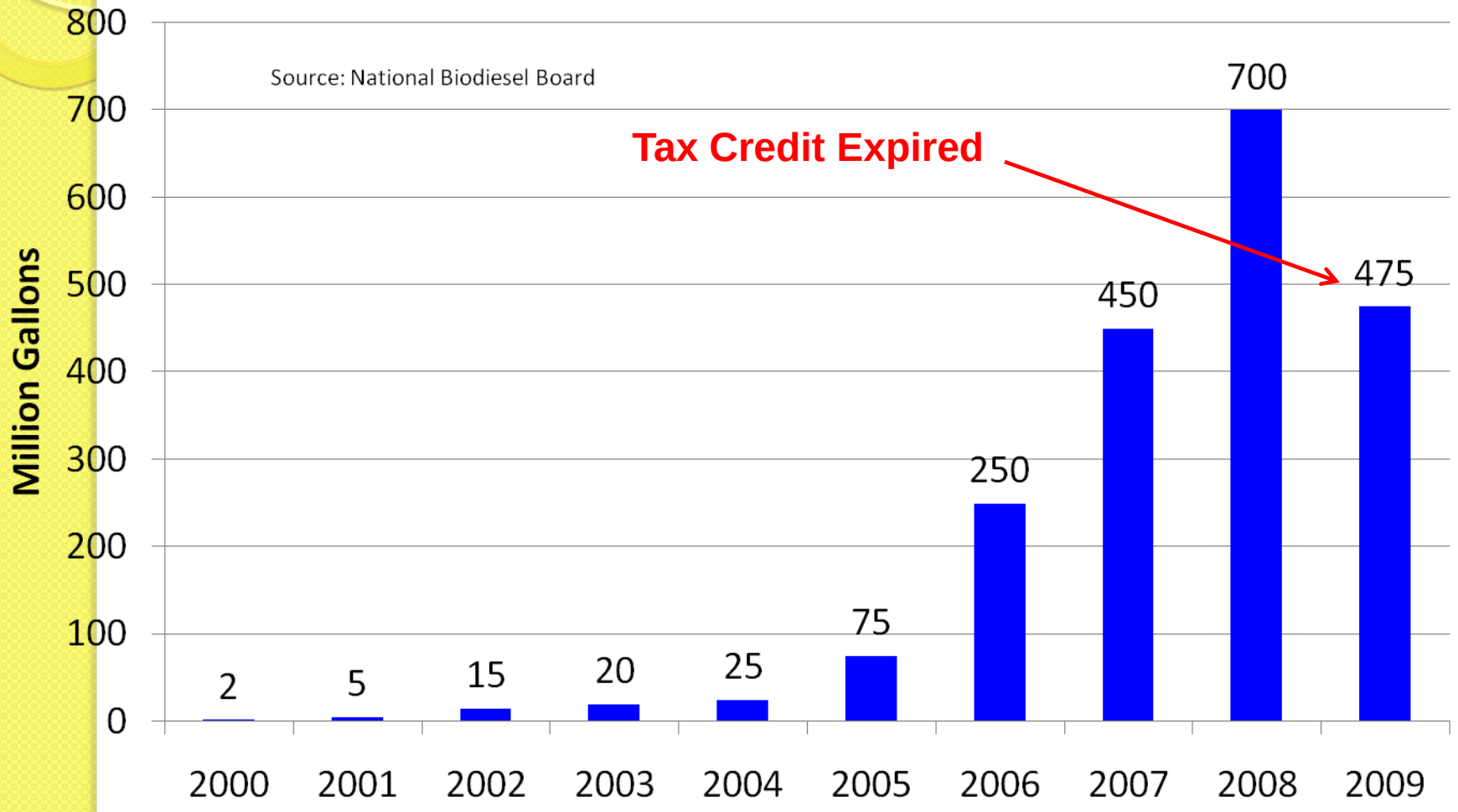
## Use of All Vegoils for Food and Industrial Products



# Argentina and Brazil
## Biodiesel Production



# U.S. Biodiesel Production 2000 – 2008 and NBB Estimate for 2009



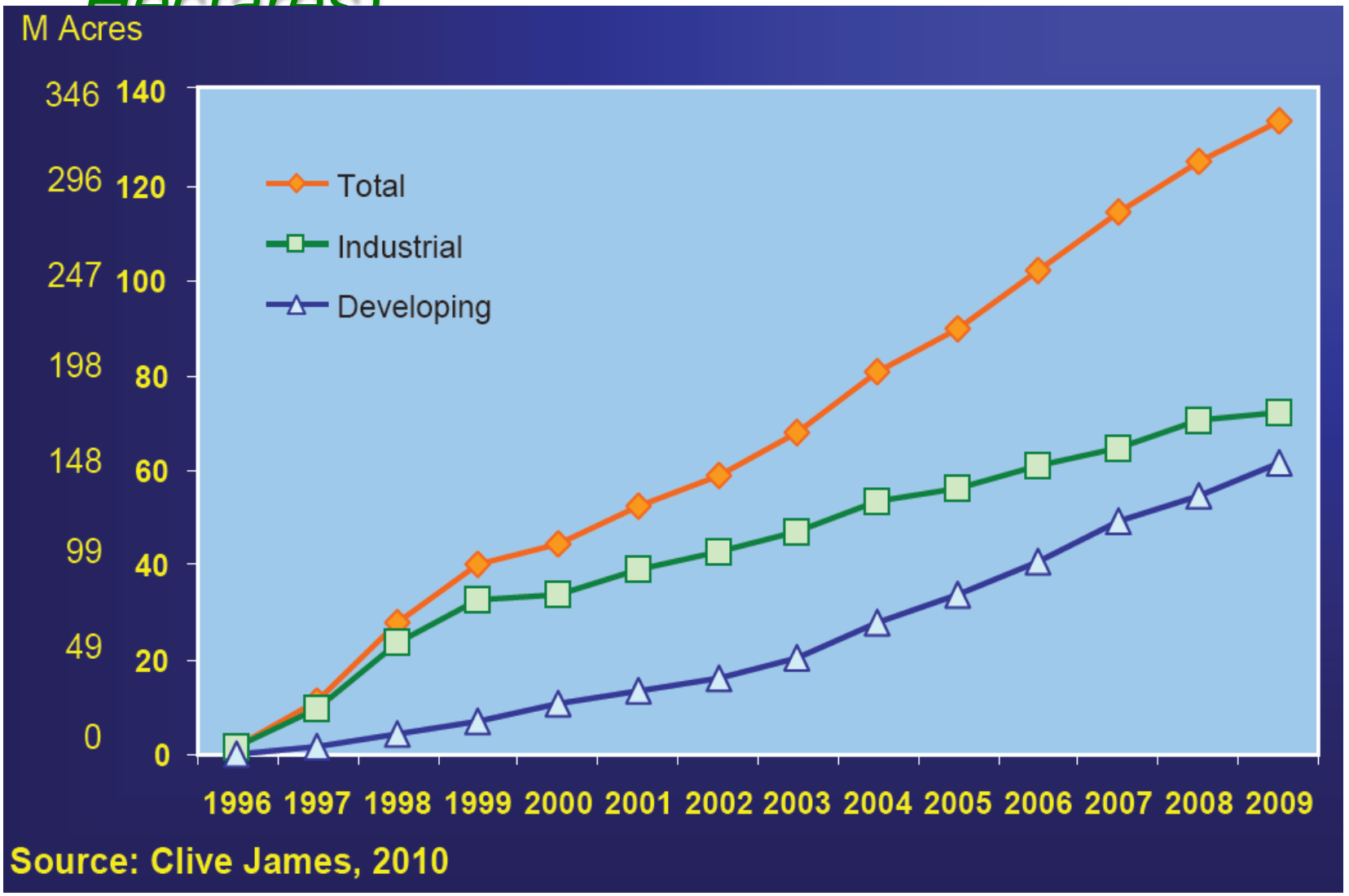
# *Result?*

- **More corn acres needed in U.S. for ethanol**
- **World vegetable oil surplus quickly being consumed in biodiesel**
- **Food Vs fuel debate will happen again**

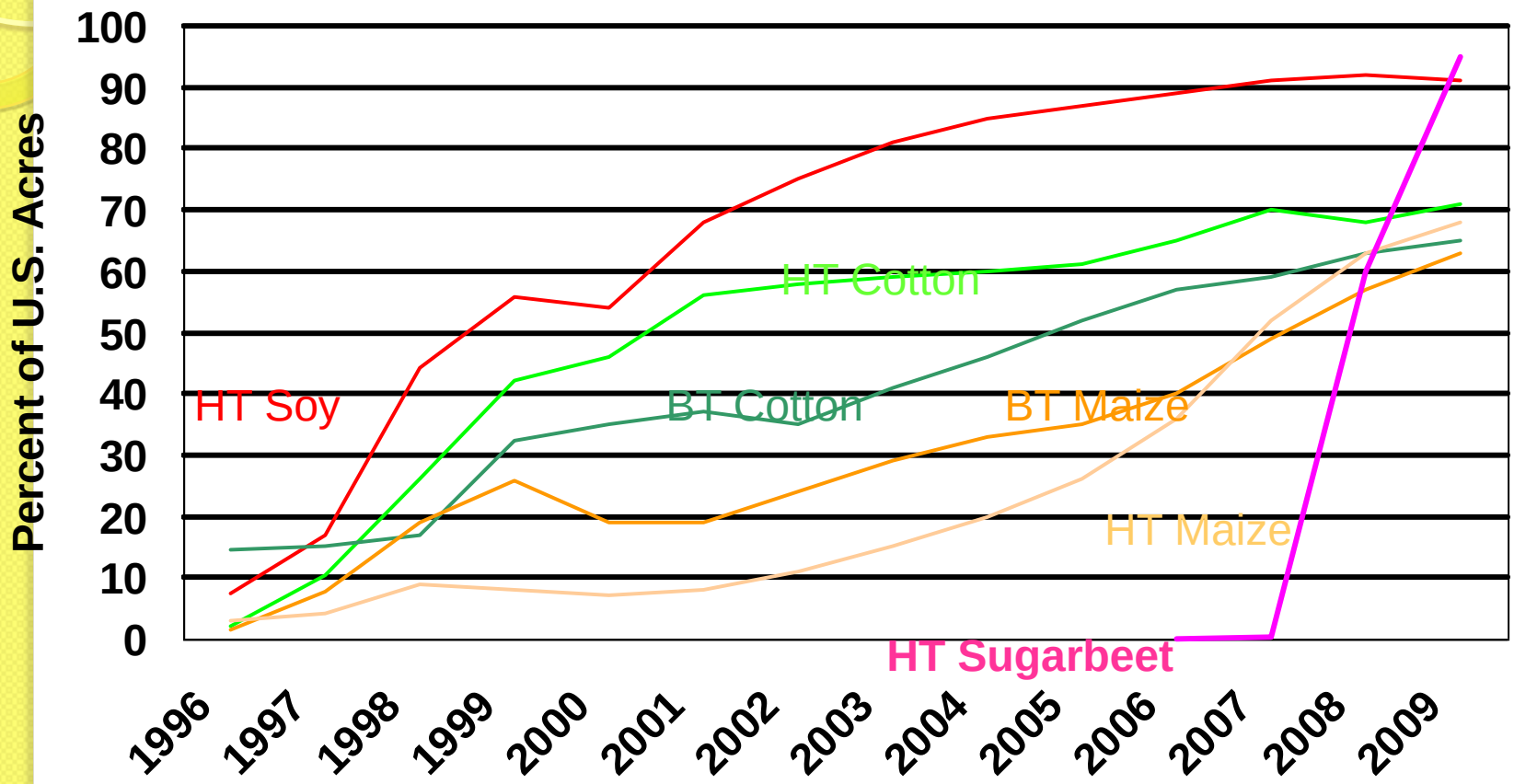
# *Biotech (GMO) the Life Saver?*

- **World is quickly adapting biotech crops**
- **Great advances in corn yields**
- **Smaller advances in soybean yields – but big advances geographically**
- **No advances in wheat yields or geography**

# Global Area of Biotech Crops, Industrial and Developing Countries (Million Hectares)



# U.S. Biotech Crop Adoption

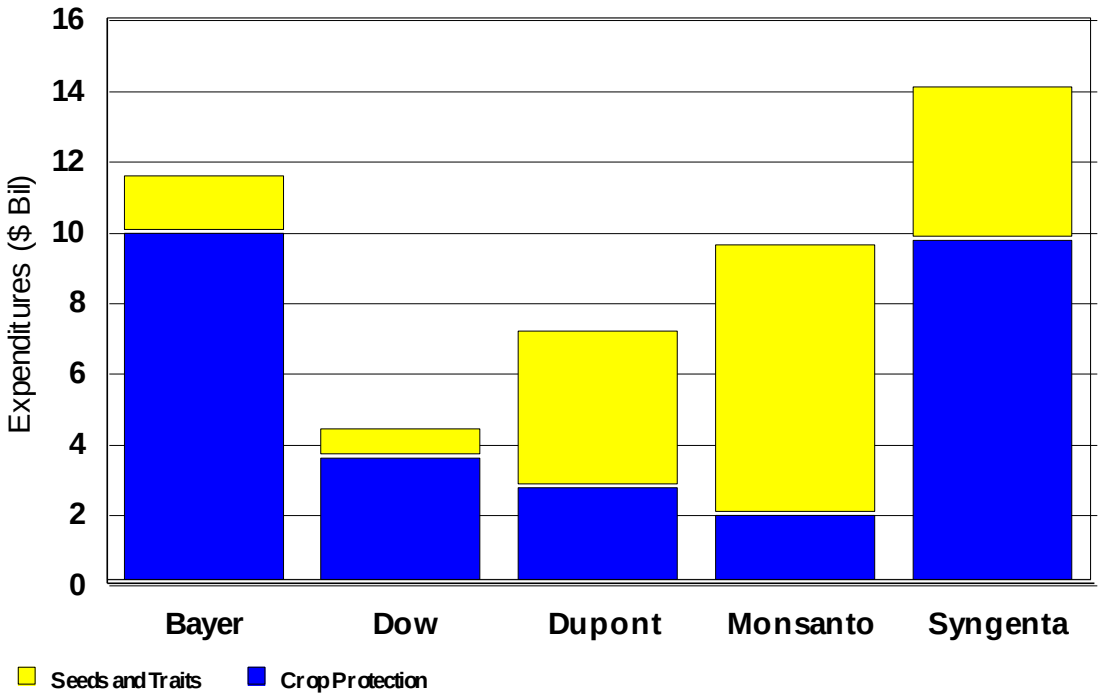



***Biotech sugarbeets used on 95% of acreage in second year of widespread planting***

USDA, National Agricultural Statistics Service; Sugar Industry Biotech Council

# *Expenditures: Crop Protection and Seeds and Traits 1990-2008*

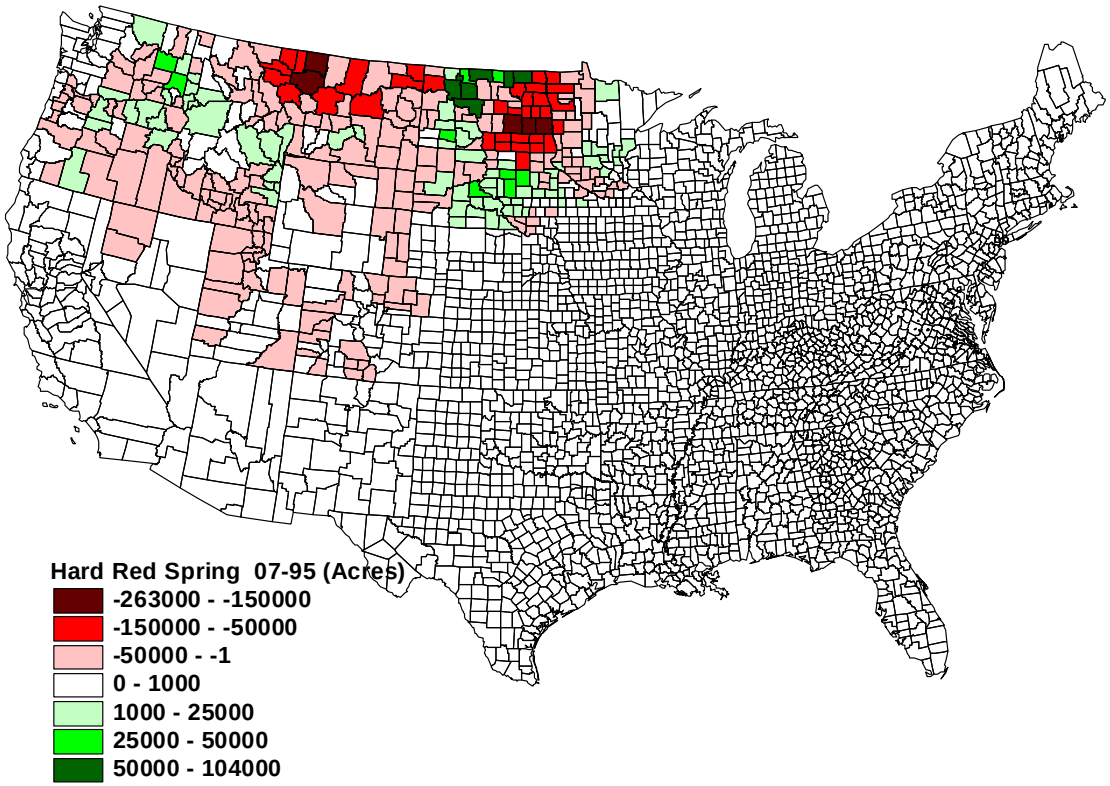
- Bayer, Syngenta, BASF, DOW and DuPont were the firms that spent the most on Crop Protection R&D.
- Monsanto dominates the "seeds and traits" sector
- **Comparative R&D Expenditures**
  - **Wheat—about 70c/acre/year**
  - **GM Row crops: $10/acre/year**



# *Crop Competitiveness: Longer-term impacts of GM in competing crops*

- **Concerns on decreasing wheat competitiveness**
- **Impacts of GM in competing crops**
  - **Changing geography on production and displacing other crops, notably small grains**
  - **Changing technology growth rates**
  - **Improved technology in competing crops (RR2 Soybeans, DR corn), raises the opportunity cost of planting wheat (or other small grains)!**

# Change in HRS Planted Areas 1995-2007



# Input Costs

- **Direct costs changes 2000-current**
  - **Soybean +111%**
  - **Spring wheat +166%**
- **Specific categories of importance**
  - **fungicides (266%) for HRS**
  - **fertilizer**
    - **518% for spring wheat**
    - **287% for soybeans**
- **Only cost which increased more for soybeans was for seed which includes implicit technology fees.**

# *GM Trait pipeline…*

- **Typical time:** **10-12 years from concept to commercialization, including 3-4 years in regulatory review**
- **Cost:** **$100+ million (including cost of deregulation)**
- **Major points**
  - **GM is costly**
  - **GM is time consuming**
  - **GM requires commitment to create "platforms" of multiple traits for successful future trait commercialization**

# *Implications*

- **DEMAND** - growth currently exceeding productivity
- **SUPPLY** – technology must improve yields
- **PRICES** – will remain highly volatile and markets will be very **FRAGILE**



with Mike Krueger