Key Ethanol & DGS Issues, Short-term and longer-term
AAEA Extension Crops Outlook Session
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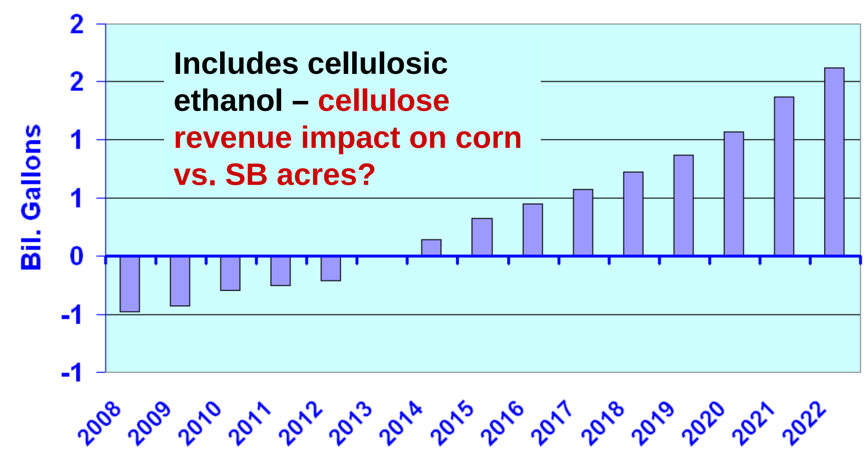
Key Ethanol & DDGS Issues

- Loss of Blenders' Tax Credit & Import Tax
  --Will mandates prevent reduced production?
  -- Will imports surge?
- The Blend Wall: Are we there yet?
- DDGS: how many bu. corn & SBM equiv.?
- Bu. needed for ethanol in 2011-12 & 2012-13?
- Corn: acres needed for ethanol in 2011-12 & 2012-13?
- Future trend in needed acres for biofuels

California Variable credit

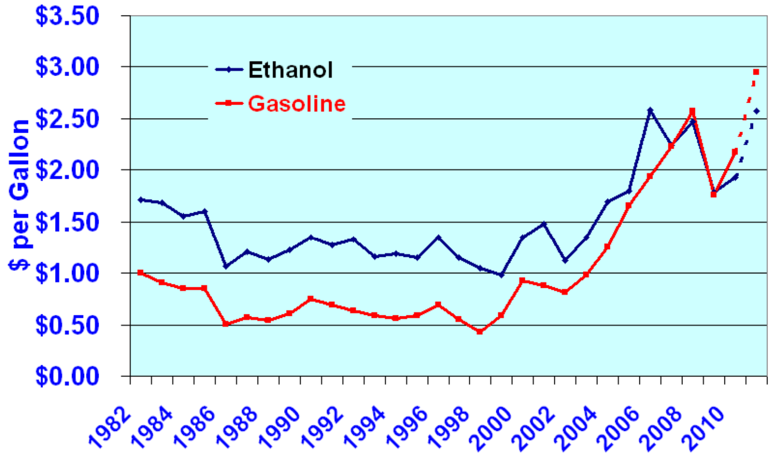
- Goes to producer, not blender
  - Based on crush spread
  - If nearby CBOT corn/LA ethanol price <$0.55, plant receives subsidy
  - Subsidy: difference between $.55/gal & avg. monthly crush margin, up to $.25/gal.
  - If monthly crush margin>$1.00/gal., producer pays back amount crush margin >$1.00
  - Cap of $3 mil./plant
- Requires either decrease corn use by 20% or reduce carbon footprint

The Blending Wall: Ethanol Mandates in Billion Gallons Beyond the E-10 Market (with 138 bil. Gal U.S. gasoline use/yr.)

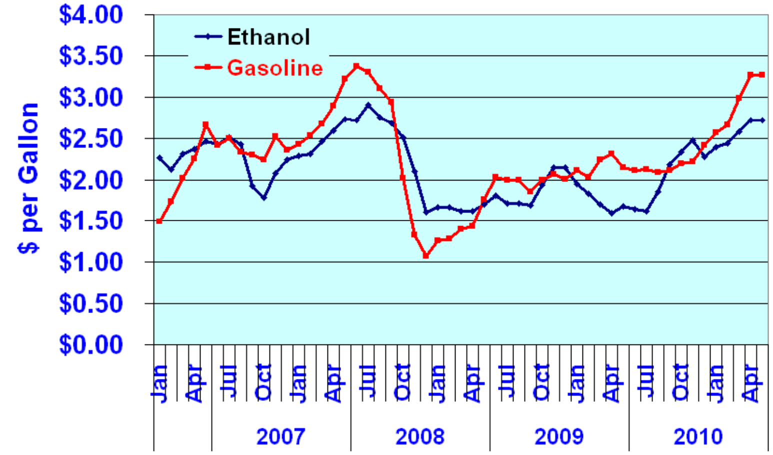


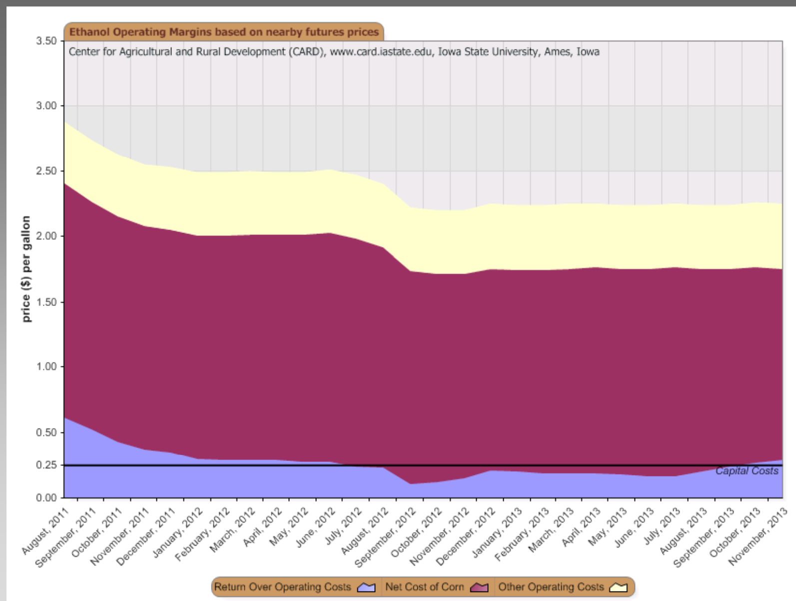
2010-11 Corn Starch Ethanol Production: 5.0 bil. bu. = 13.9 bil. gal.
Ethanol Exports: 0.4 bil. gal. ?

Ethanol & Unleaded Gasoline Annual Average Rack prices, Omana, Nebraska



Monthly Ethanol & Unleaded Gasoline Annual Average Rack prices, Omana, Nebraska





Source: CARD, ISU

Ethanol Mkt. Year Production vs. Govt. Mandates (Bil. Gal. & Mil. Bu.)

	EPA Mand't	Corn Bu. Equiv.	Corn Bu. For eth.	Excess vs. Mand't
2008-09	10.0	3,597	3,677	80
2009-10	11.5	4,137	4,568	431
2010-11	12.4	4,460	5,050	540
2011-12	13.0	4,676	5,150?	374
2012-13	13.6	4,892	5,180?	288
2013-14	14.2	5,108	5,300?	192
2014-15	14.8	5,324	5,350?	26
2015-16	15.0	5,396	5,400?	4

Marketing year data

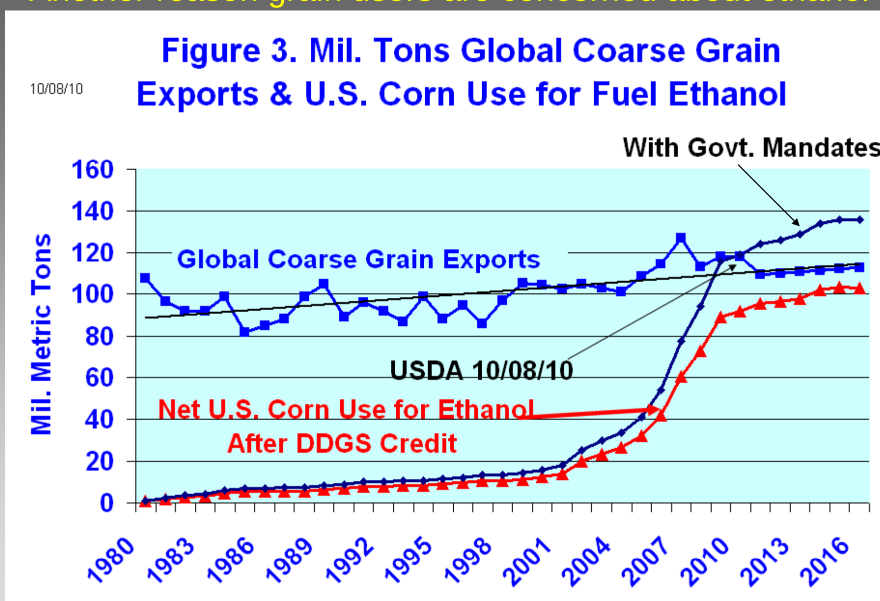
Implications of losing blenders' credit & import tax

- Corn volume for ethanol may be reduced
- Reduction depends on rack ethanol vs. gas prices
- May be modest in short term, with current wide ethanol-gasoline price spread
- Implications for cellulosic ethanol & its investors are serious
- Short-term, don't look for big ethanol imports. Longer-term, imports could meet a substantial part of advanced biofuels mandates & compete with corn starch ethanol

Emerging Biofuels Policy Issues, Cont.

- Concerns of industries relying on ag-based biofuels feedstocks
  - Food manufacturers
  - Livestock & poultry industries: what happens in a short-crop year, with mandates?
  - Foreign buyers, with advantage of weak $

Another reason grain users are concerned about ethanol



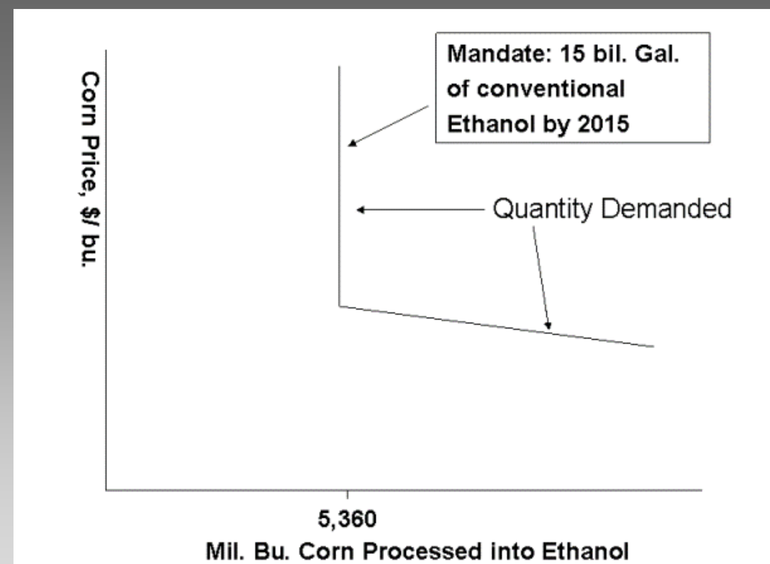


Figure 3. Demand for Corn for Ethanol with Mandates

Short Crops & Ethanol

- **Need for pre-determined rules on how to adjust & how ethanol & livestock might share the adjustment**
- **Potential economic impacts: large**
- **Current system: decisions by Energy & Ag Secretaries – probably as or after crisis has emerged**

Wisner 2011-12 Corn for Ethanol projections

Corn Yield, Bu./A.	Corn for Ethanol m. bu.	DGS m. bu. crn. equiv.
• 148.8	• 4,825	1,100
• 153	• 4,950	1,115
• 159	• 5,050	1,150

Assumes blenders' tax credit & import tax will not be renewed

Comparisons:

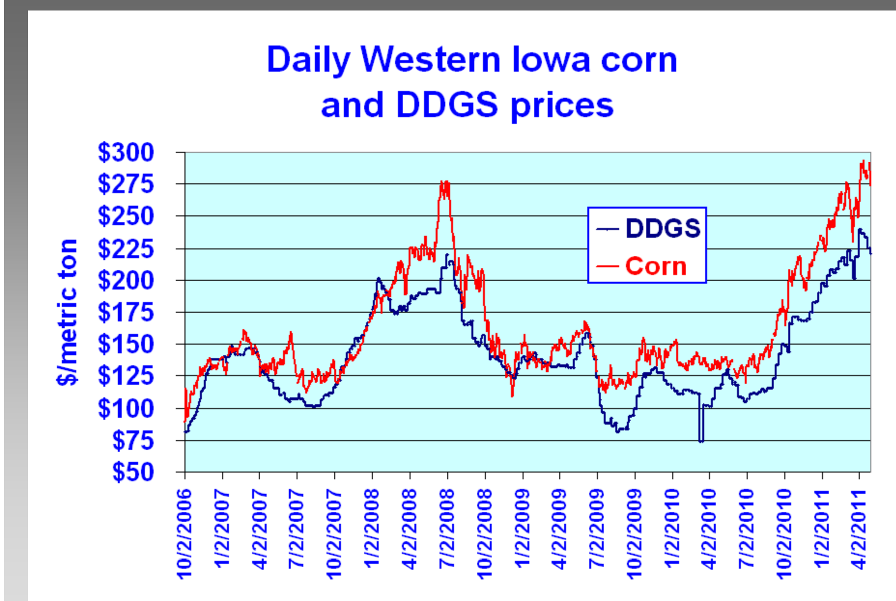
2010-11	**2010-11**	
• 152.8	• 5,000	1,145
2009-10	**2009-10**	
• 164.7	• 4,568	1,045

DGS has rounded numbers

Corn Acres Needed for Ethanol

	Gross Mil. A.	Net Mil. A.	
2009	27.7	2009	17.0
2010	32.7	2010	21.8
2011	31.3	2011	22.7**
2012	31.7	2012	23.4**

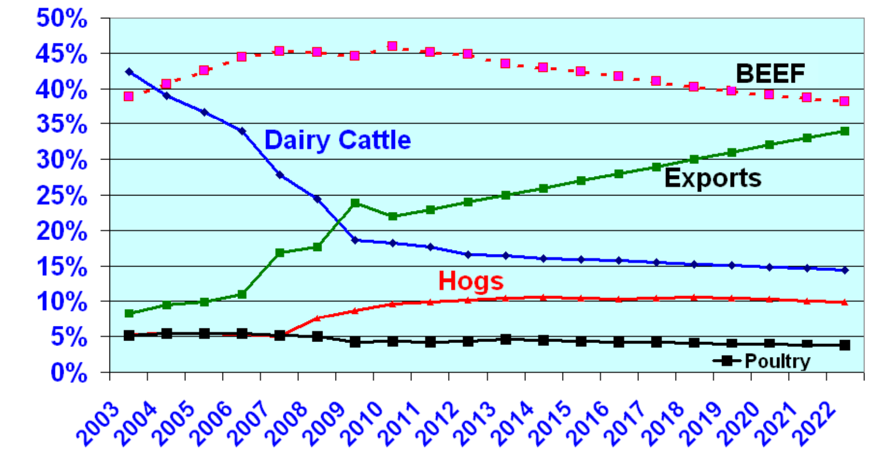
*** After DGS corn & SBM + corn oil credits**
**** With trend yields**



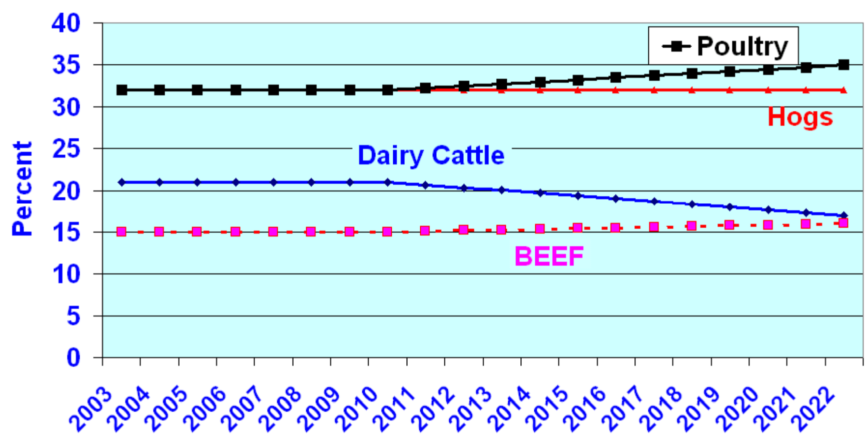
DGS/Corn Replacement Ratios

	Beef	Dairy	Hogs	Poultry
Avg.	1.10	0.59	0.80	0.55

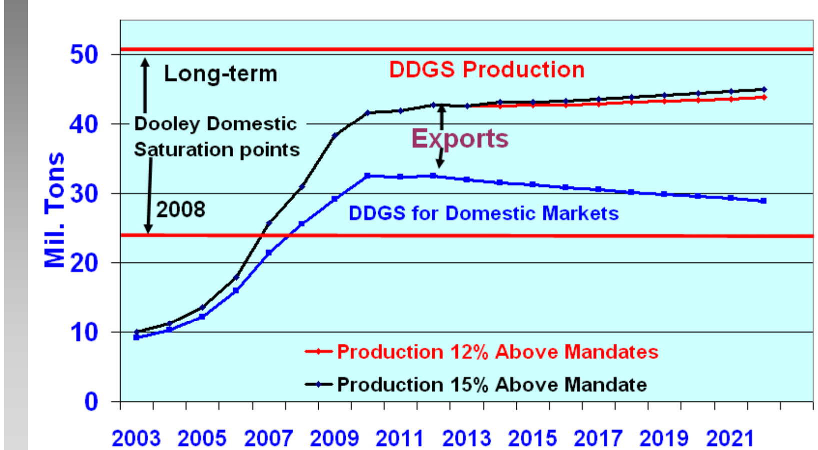
Assumed &Projected Trend in DGS Market Shares by Species

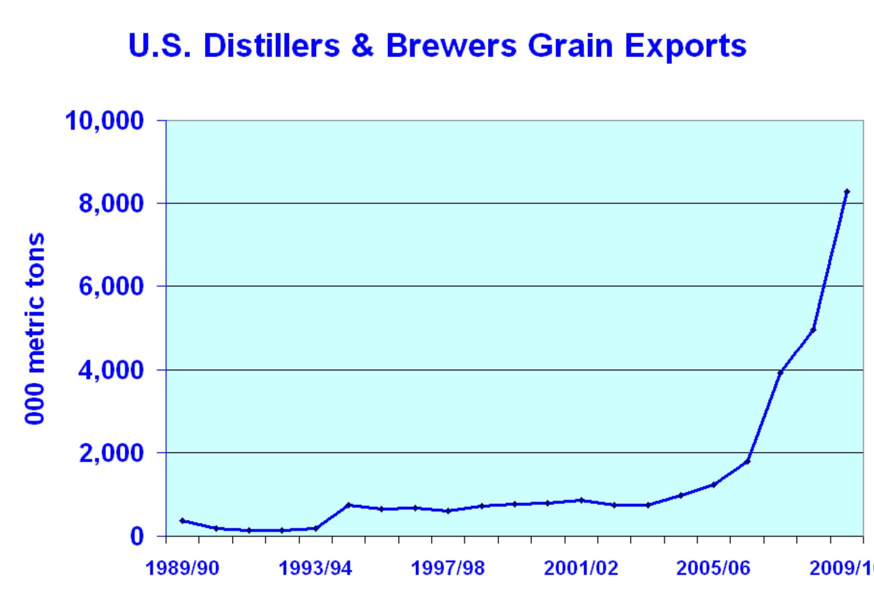


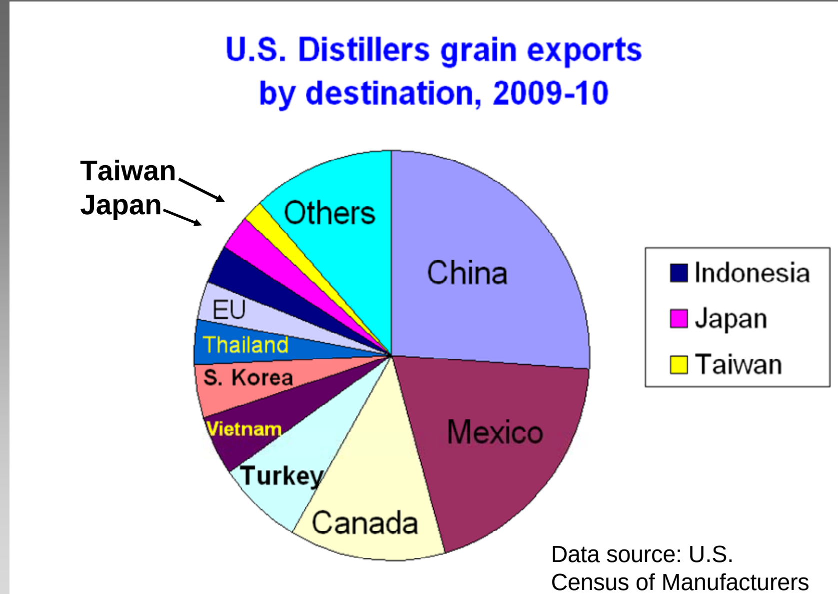
Assumed Percentage DDG Export Market Shares by Species



Projected U.S. Domestic DGS Use & Production, With Ethanol 12% & 15% Above Mandates in 2022







E-15 blends

E-15 for 2001 & newer vehicles = about 40% of vehicles

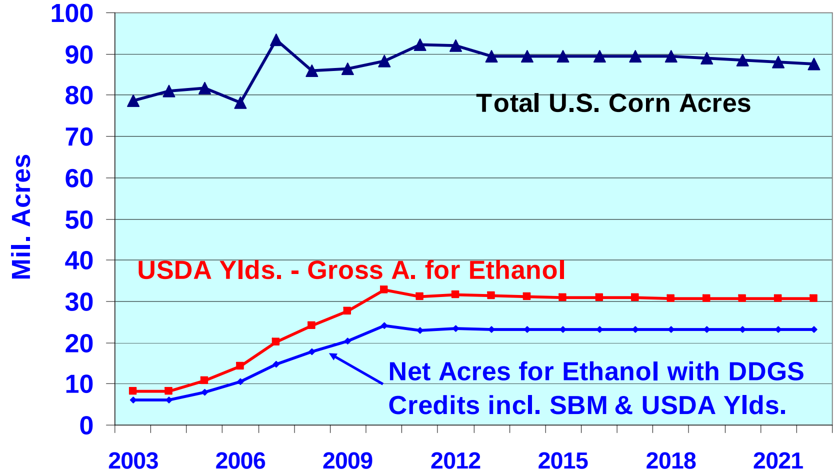
- **Divided market creates infrastructure issues**
  - **Retailer concerns: investment, space, liability issues**
  - **Modified rules may simplify application of blender pumps**
  - **Concerns of off-road users: how to get non-ethanol gas**
  - **Concerns of auto manufacturers: emissions equipment**
  - **The future? Conversion to butanol, other drop-in fuels, pipeline transport?**
- **E-85: lack of retail outlets & lack of competitiveness**
- **Solution to blend wall a key for cellulosic ethanol including that from corn stover**

Bottom line: look for slow increase in ethanol demand instead of immediate jump

Est. DGS Equivalent in Mil. Short tons SBM, 2010-11

- **Domestic SBM 4.78**
- **SBM exports 1.60**

Estimated & Projected Total Corn Acres & Acres needed or Corn Starch Ethanol to 2022



Conclusions for 2011-12 Corn Outlook

- **Blend Wall & lost blenders tax credit may stabilize or possibly reduce corn processing for ethanol. 2011-12 Likely range: 4.8 to 5.05 bil. bu., depending on 2011 corn crop size**
- **Large ethanol imports look questionable for 2011-12, but depend on size of world sugar crop**
- **For longer term, ethanol imports may be more significant if import tax eliminated**
- ***Future of corn stover ethanol at risk with blend wall & removal of import tax***
- ***If blend wall is removed & cellulose subsidies continue, impact of $50-$60/A. stover revenue on corn vs. soybean acres?***

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