

# Corn, Soybeans & Science



**2015 National Ag in the Classroom Conference**

Cindy Hall

Iowa Agriculture Literacy Foundation







Soybeans



# Soybeans: The Stats

- ▶ Scientific name – Glycine Max
- ▶ Dicot
- ▶ 60– 90 pods/plant
- ▶ Each pod holds 2 to 3 pea-sized beans
- ▶ Soybeans yield 50 bushels/acre on average
- ▶ A bushel of soybeans weighs around 60 pounds  
(48 pounds of meal and 12 pounds of oil)

### Slide 3

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**KF1**

Maybe add the origin of soybeans as well

Kelsey Faivre, 5/11/2015

**KF2**

I would split this slide into two. The first would be "Soybeans: The Basics" and contain the first two bullet points and some elaboration, potentially a picture of the plant. The second slide would be the stats slide. That way there is less text on each slide, and the slides are more focused.

Kelsey Faivre, 5/11/2015



# Soybeans Today

- ▶ Planted on more than 77.5 million acres nationwide (9 million in Iowa)
- ▶ Valued at \$43.2 billion annually nationwide (5 billion in Iowa)
- ▶ Protein of choice for feed manufacturers
- ▶ Growing demand for fuels and chemicals.

# Soy Production Around the World

- ▶ United States (35%),
- ▶ Brazil (27%),
- ▶ Argentina (19%),
- ▶ China (6%) and
- ▶ India (4%)

Soy grain production

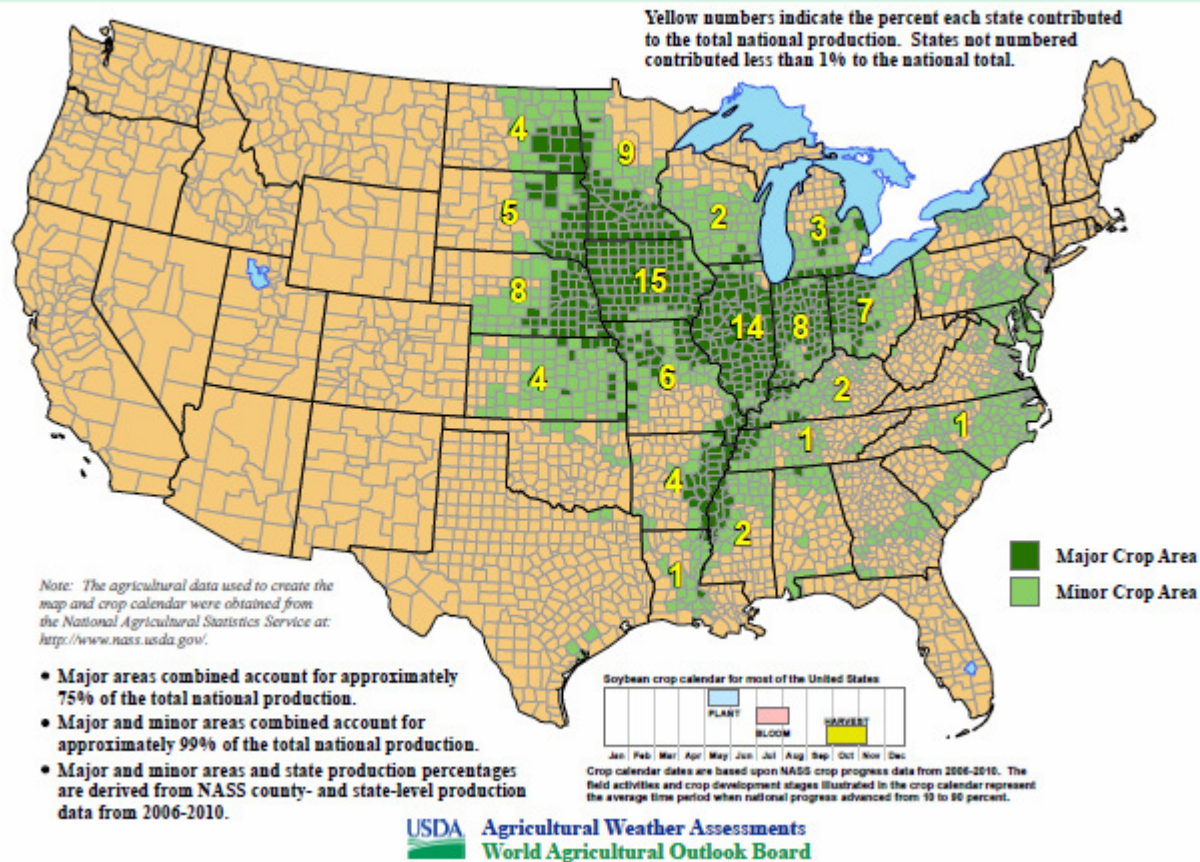


Source: USA Agriculture Census

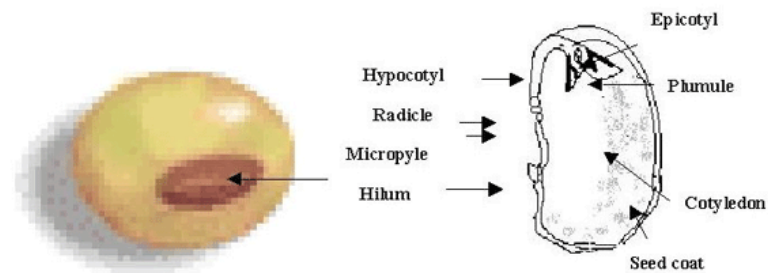


# Real

## United States: Soybeans

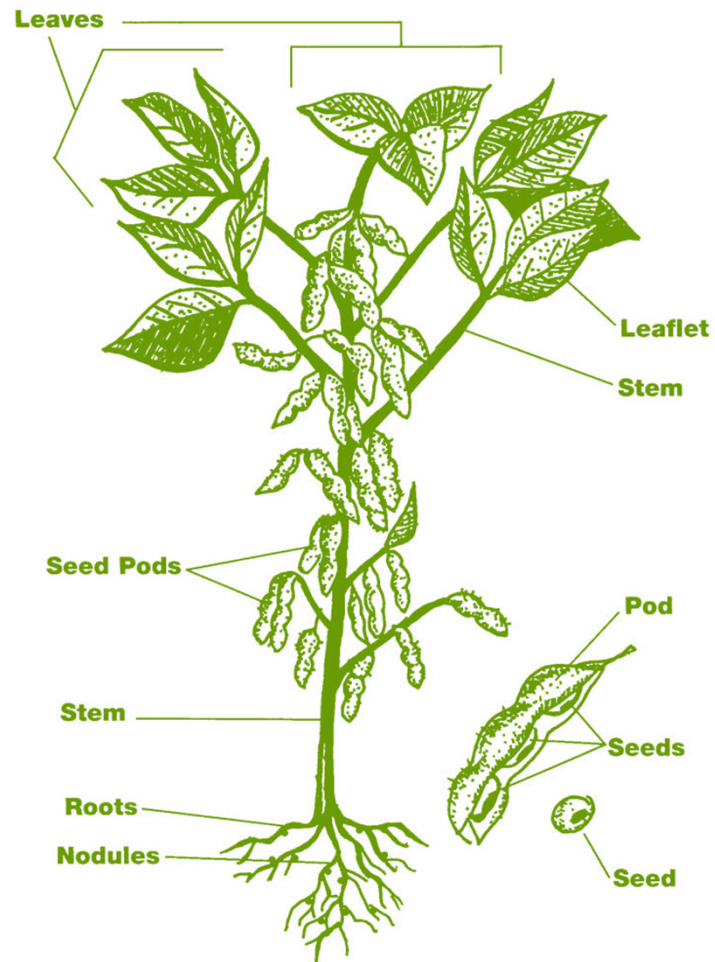


# The Soybean Seed





# The Soybean Plant



## Slide 8

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**KF4**

I would choose which of these pictures is best and have just one slide on the soybean plant. The information could become very repetitive with two pictures of the soybean with the intention of describing plant parts.

Kelsey Faivre, 5/11/2015

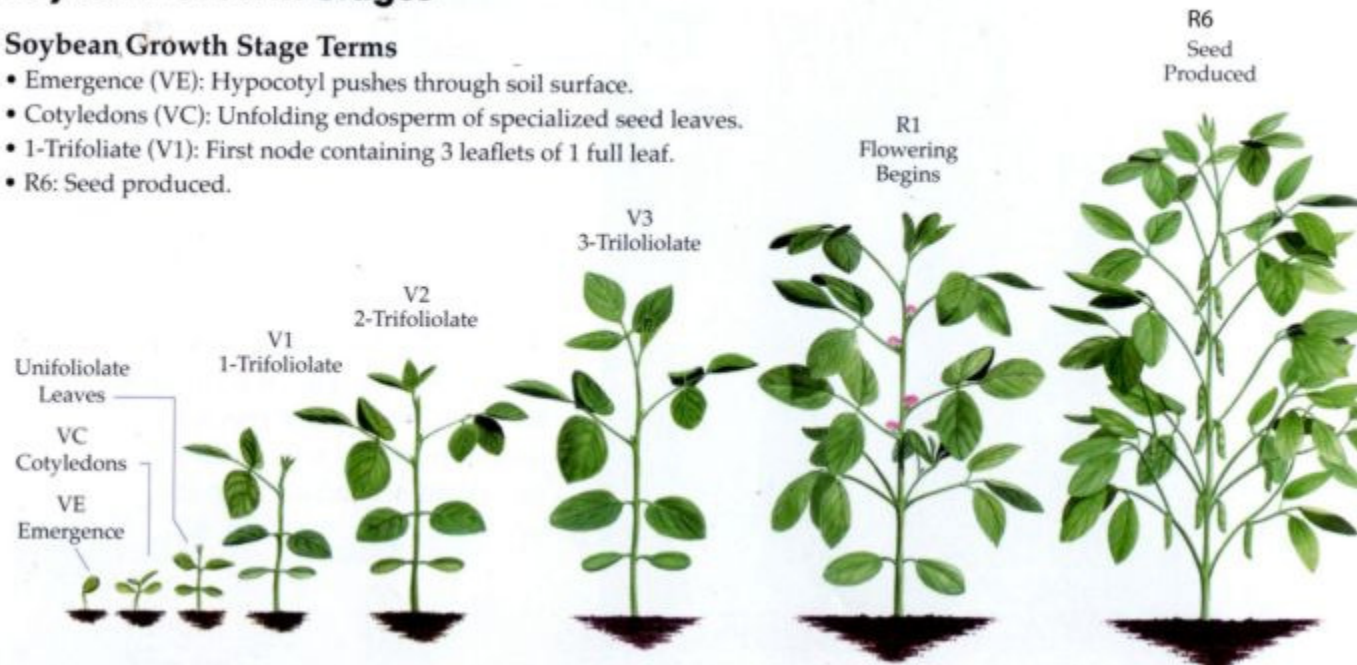


# The Soybean Plant

## Soybean Growth Stages

### Soybean Growth Stage Terms

- Emergence (VE): Hypocotyl pushes through soil surface.
- Cotyledons (VC): Unfolding endosperm of specialized seed leaves.
- 1-Trifoliolate (V1): First node containing 3 leaflets of 1 full leaf.
- R6: Seed produced.



## Slide 9

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**KF4**

I would choose which of these pictures is best and have just one slide on the soybean plant. The information could become very repetitive with two pictures of the soybean with the intention of describing plant parts.

Kelsey Faivre, 5/11/2015



# Germination



# Emergence







# Sprout or Seedling

True leaves

Cotyledon leaves

(seed leaves)





# Young Plants (Unifoliate Leaves)



**Unifoliate leaves**



**Trifoliate leaves form**

# The Closing Canopy



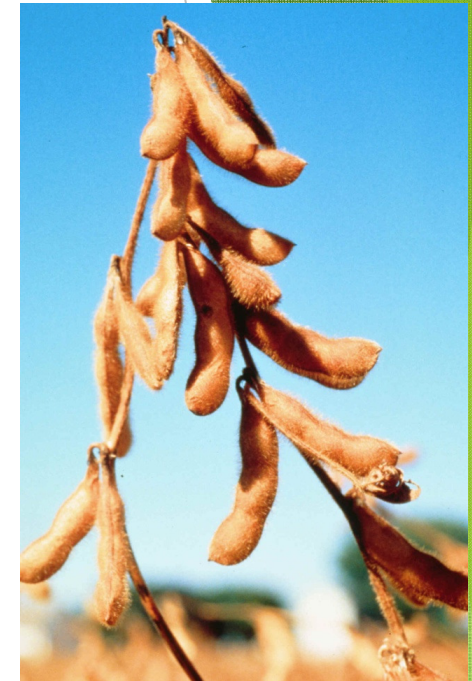


# Bloom Stage





# Pod Development



# Ready for Harvest



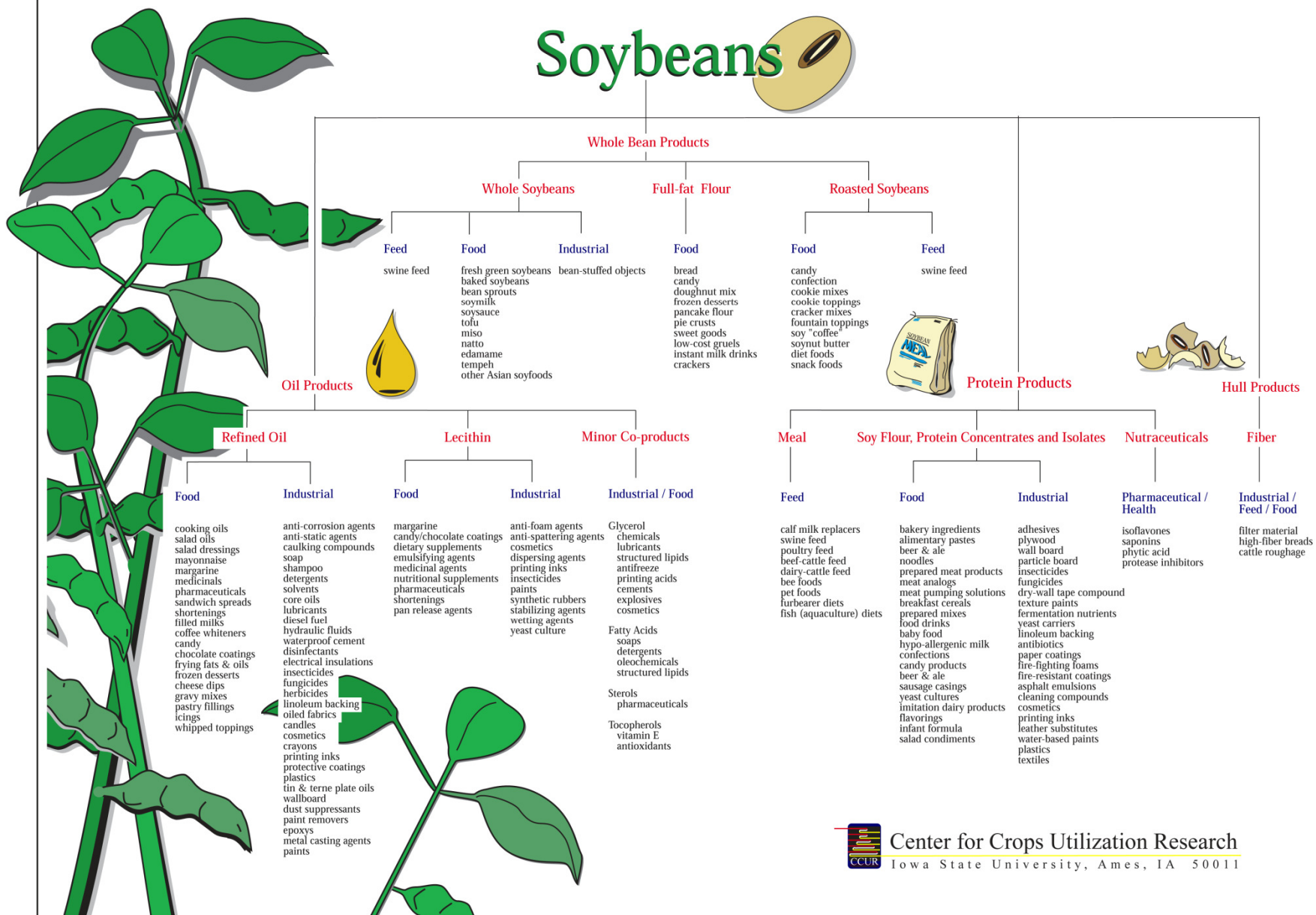


# So many uses...





# Soybeans



Center for Crops Utilization Research  
Iowa State University, Ames, IA 50011

## Slide 19

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**KF5**

This chart might be better as a handout for the audience rather than a slide. They won't get much out of it being projected with so many words so small.

Kelsey Faivre, 5/11/2015





# Corn

## The Stats

- ▶ 99% of corn grown in Iowa is Yellow Dent Corn (Field Corn)
- ▶ Scientific name – Zea Mays
- ▶ Monocot
- ▶ Plants are 8-12 feet tall
- ▶ 800 kernels on ear

## Slide 21

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**KF6**

Again, I would add a separate stats slide and separate basics slide. The first and last two bullets could go on a separate slide with the average IA corn yield and other stats.

Kelsey Faivre, 5/11/2015

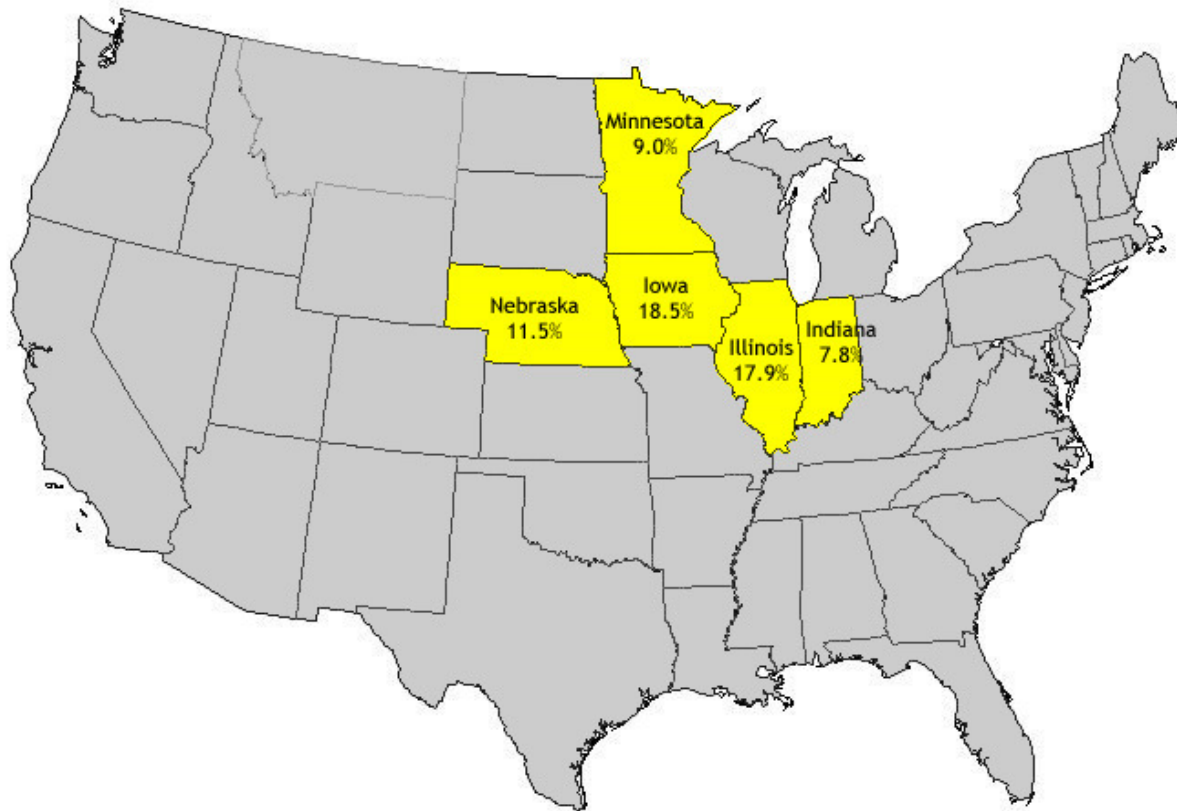
# Why Iowa?

- ▶ Long enough growing season
- ▶ Warm enough
- ▶ Regular and adequate rain
- ▶ Deep, rich soils
- ▶ Nutrients from livestock production

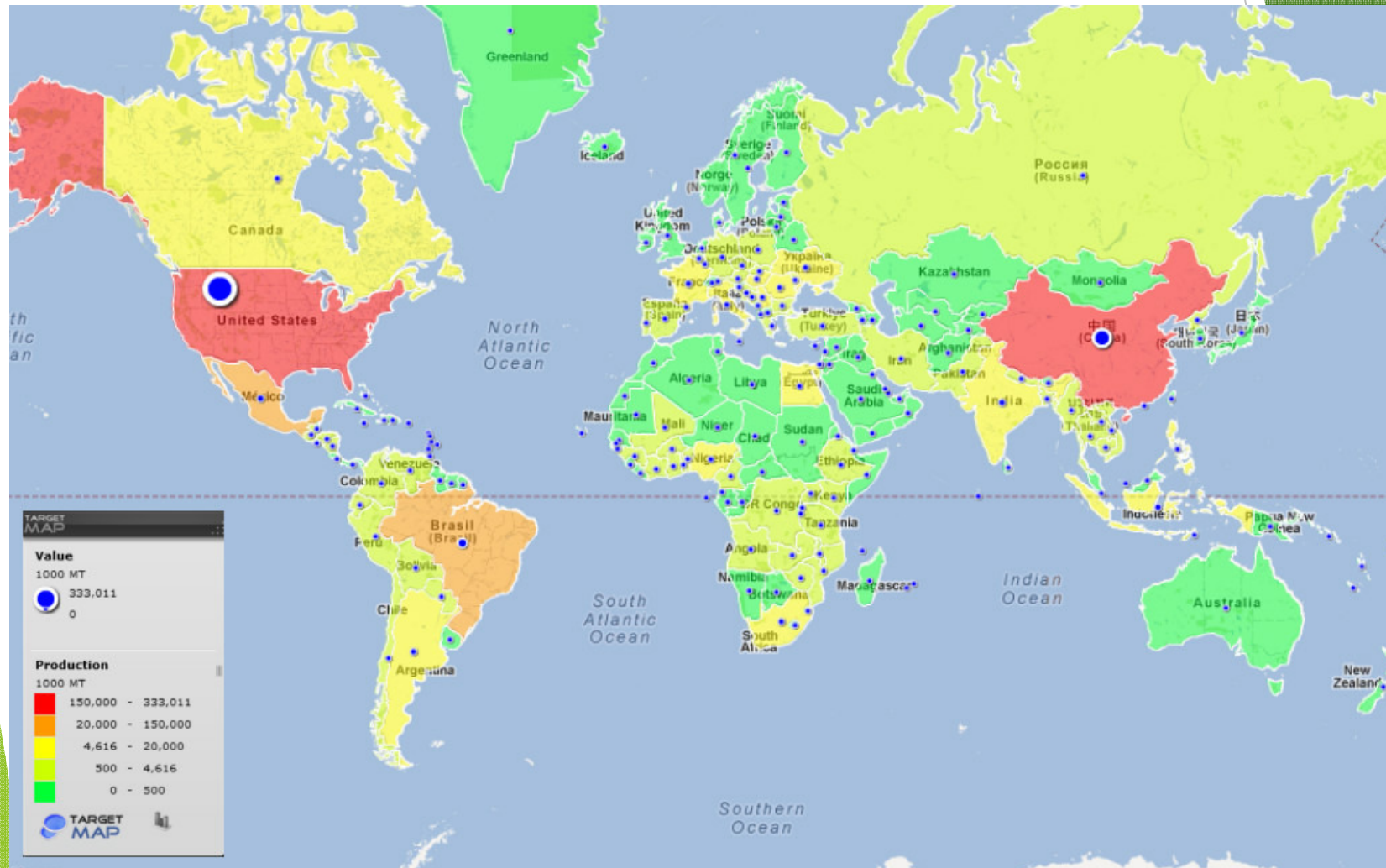


# Corn in the U.S.

## Top 5 Corn-Producing States in the U.S.

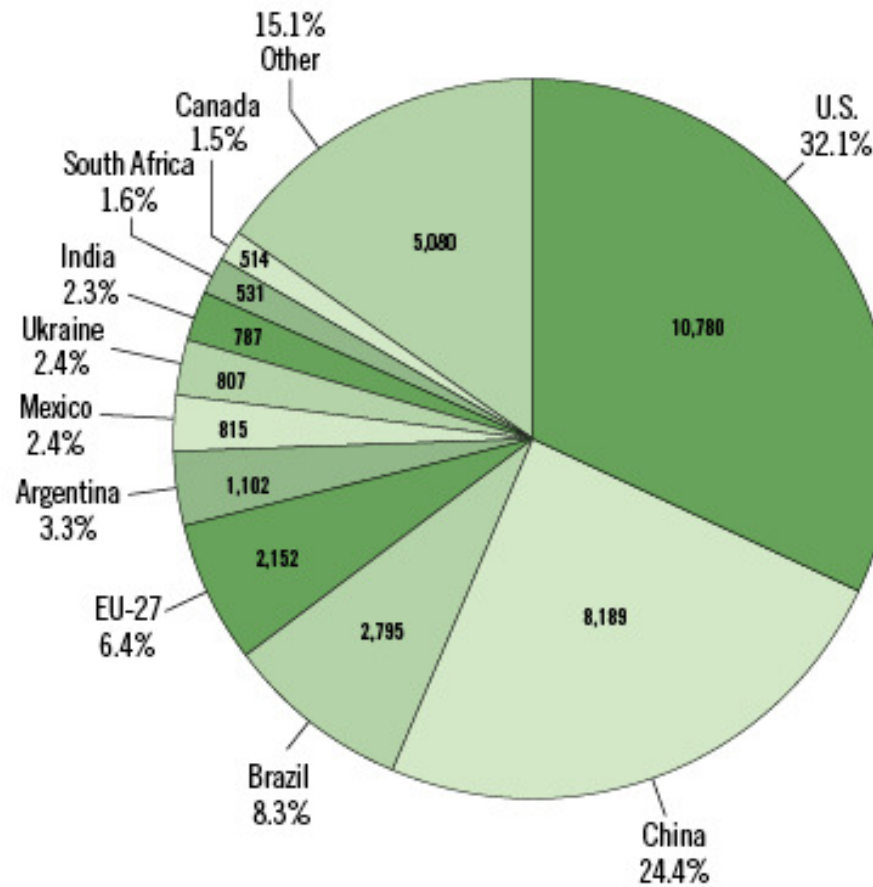


# Where is corn grown?



# What countries grow the most corn?

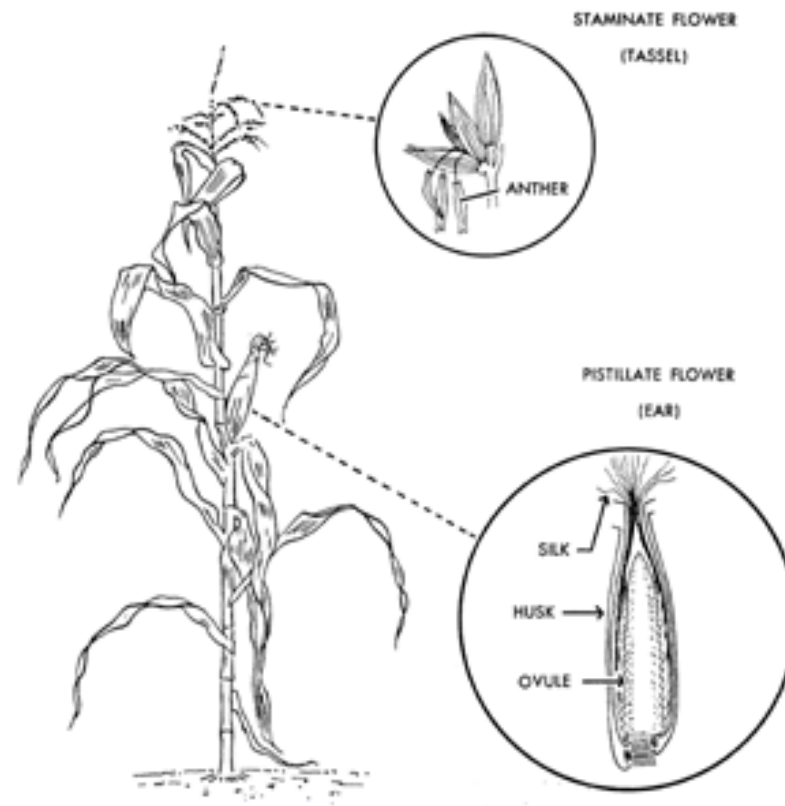
**World Corn Production  
2012-2013\***  
(million bushels)



Id Markets and Trade, Jan 11, 2013 \*Marketing Year October 1, 2012- September 30, 2013



# The Corn Plant



## Slide 26

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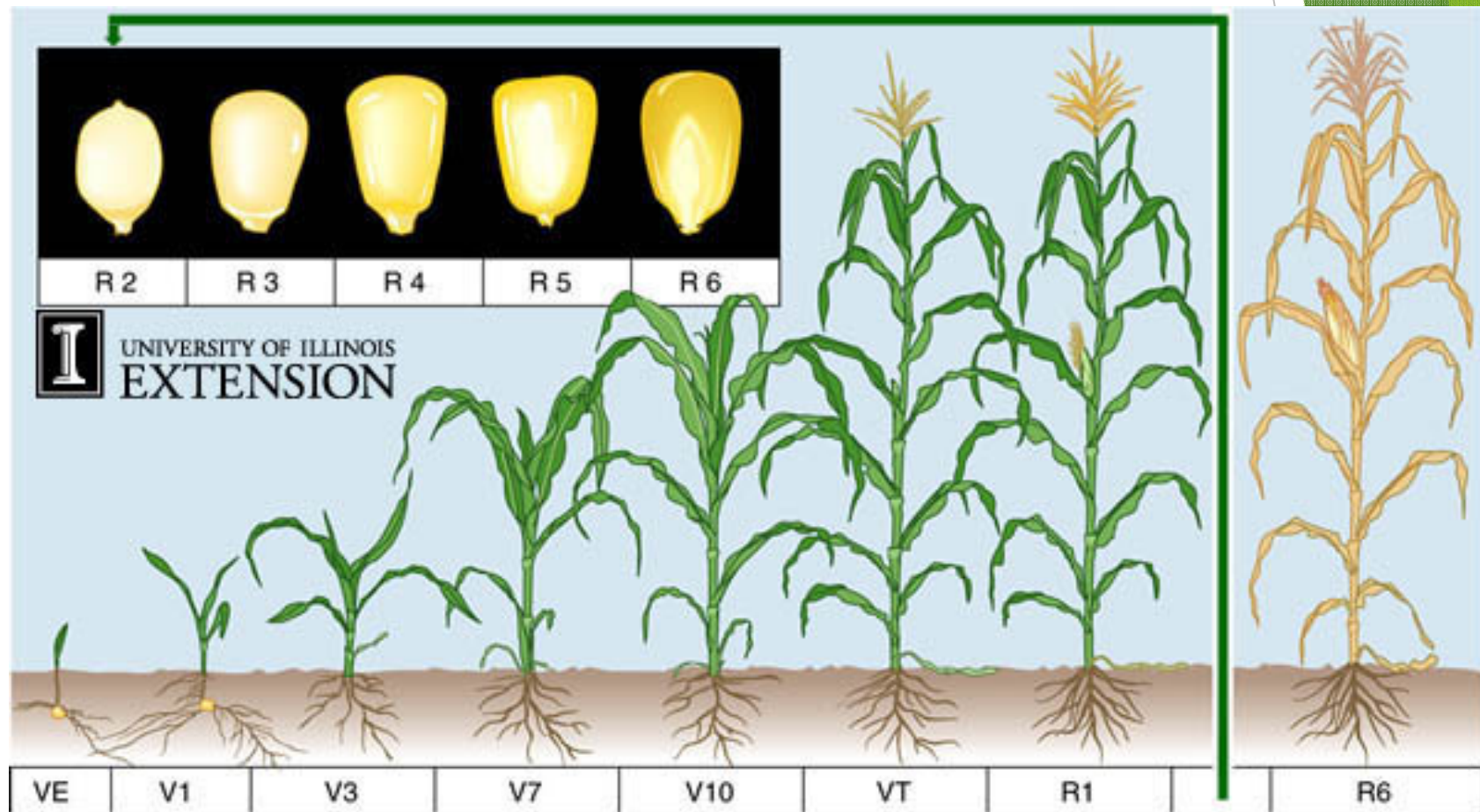
**KF7**

I would add several more slides about corn growth and reproduction. Even pictures just of R1-black layer could be interesting. I'll bring in my corn G&D book that outlines the nitty gritty of those stages so we have good information on them, too.

Kelsey Faivre, 5/11/2015

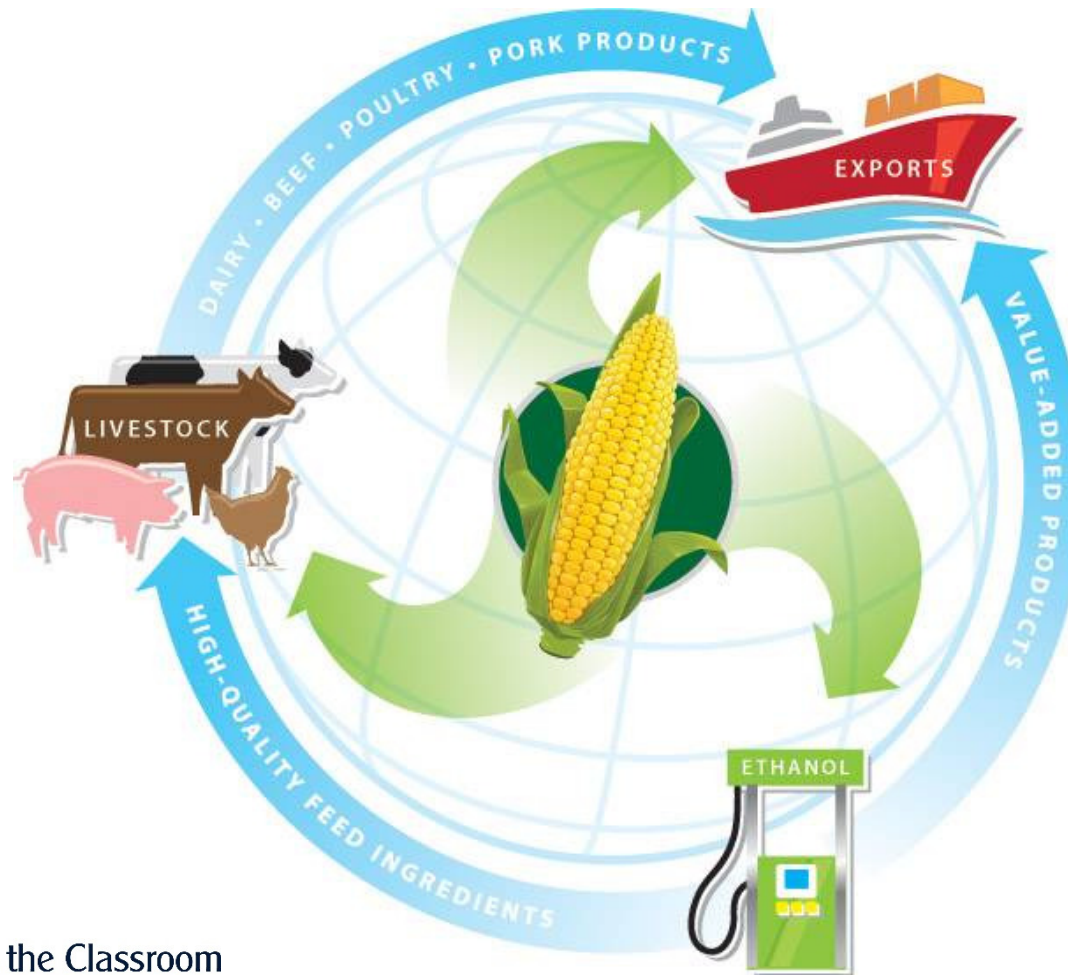


# Corn Staging



# CORN

## *In the U.S. and Around the World*





## Slide 28

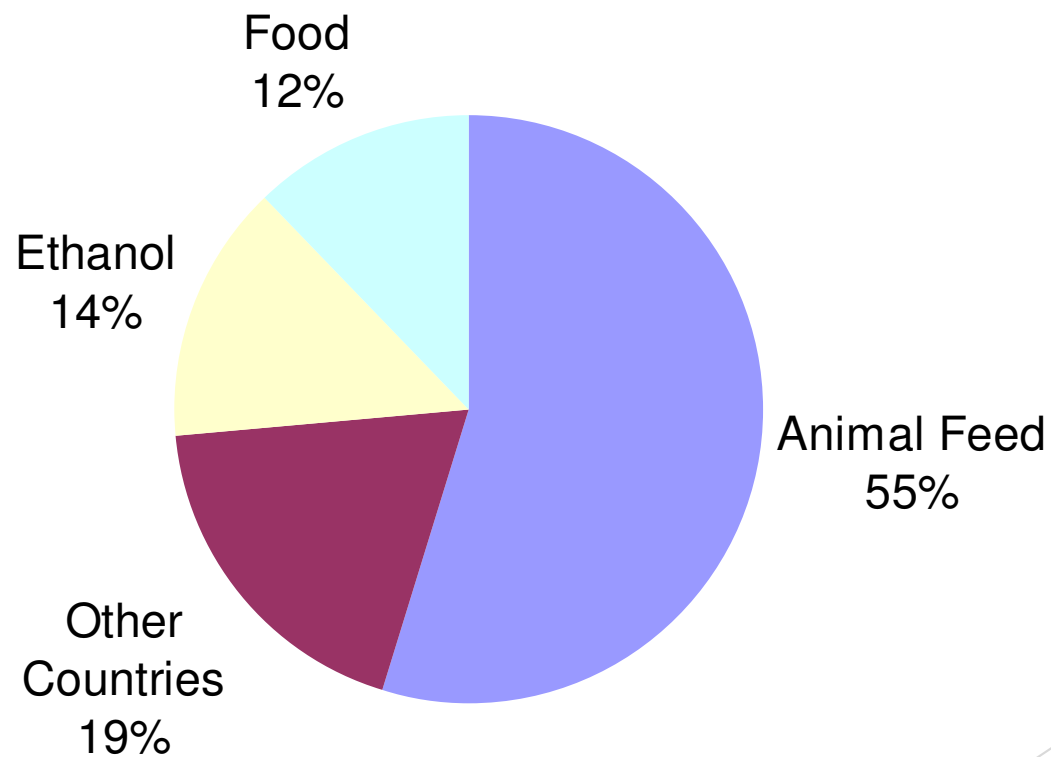
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**KF8**

I think you could add the statistics to the notes for this slide and delete the slide that follows it. It's nearly the same information, but one has numbers and the other has stronger graphics.

Kelsey Faivre, 5/11/2015

# How is corn used?



# So many uses...





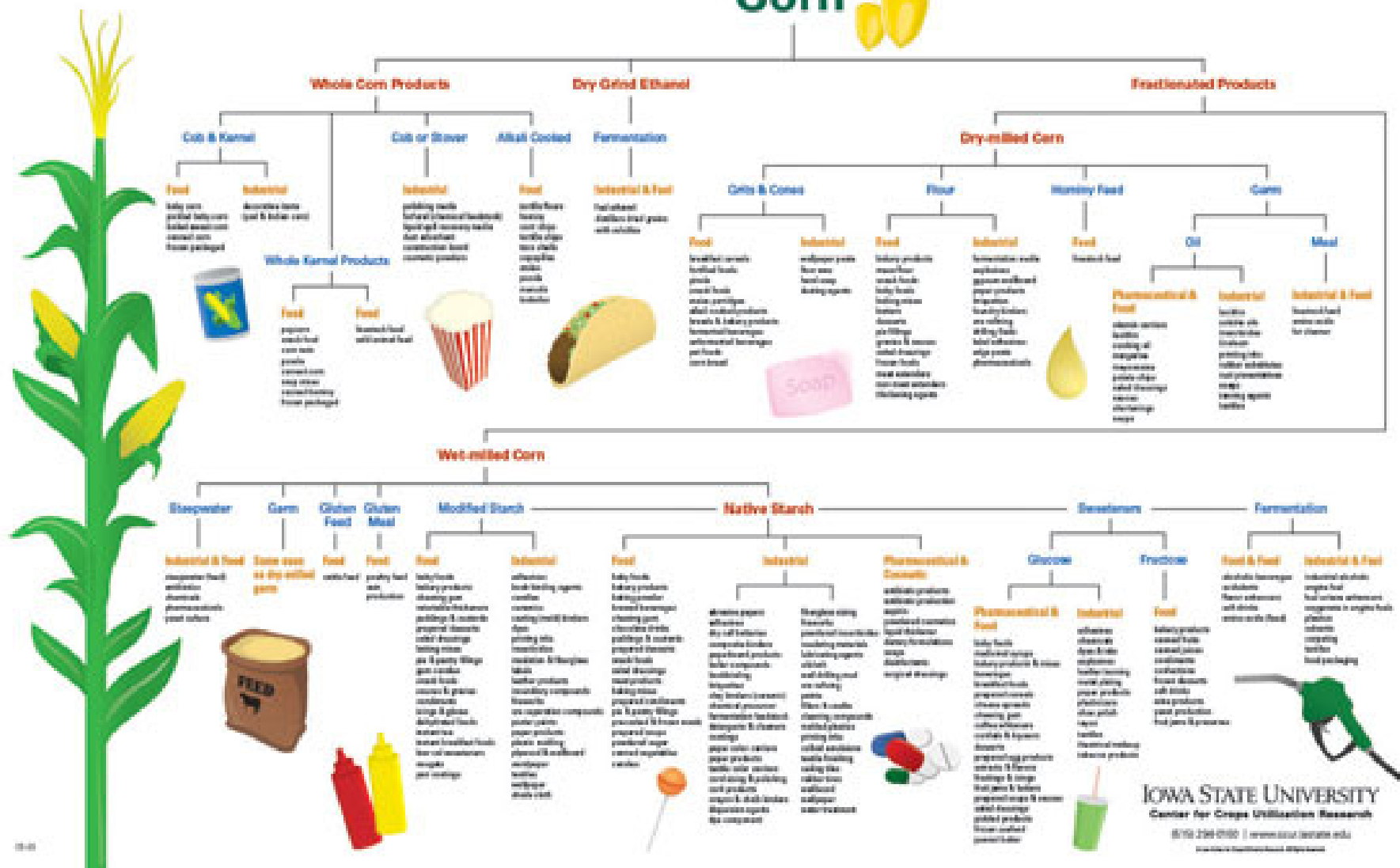
## Slide 30

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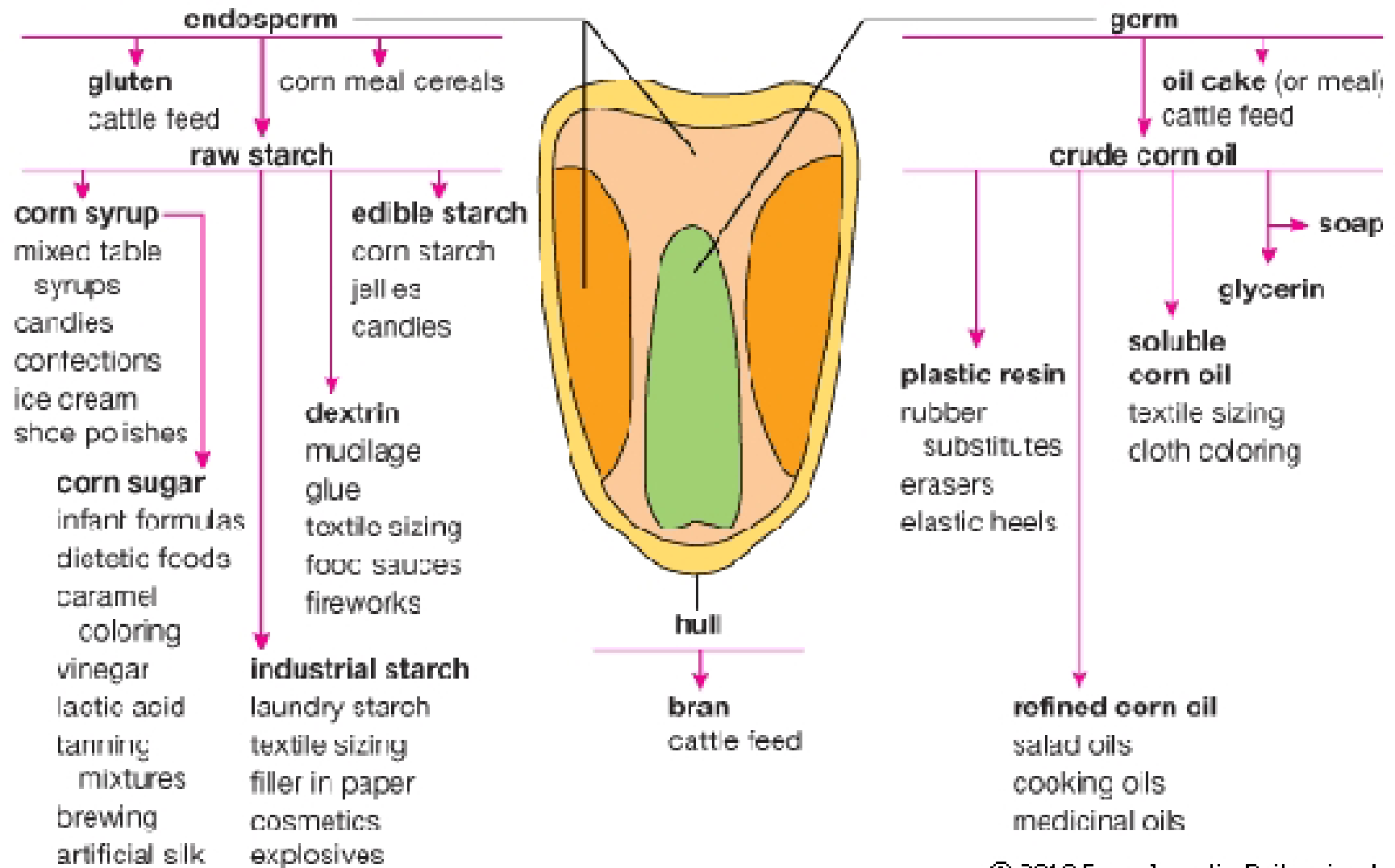
**KF9**

<http://www.ncga.com/uploads/useruploads/cornusesposter.pdf> This chart might make a good handout.  
Kelsey Faivre, 5/11/2015

## Corn



## Products of the corn plant





## Slide 32

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**KF10**

I love this diagram!

Kelsey Faivre, 5/11/2015

Enough talking. Let's do something!



# Group Learn & Share

- ▶ Give a 1 minute summary
- ▶ Then answer these questions:
  - ▶ How would you use the resource with students?
  - ▶ How would you modify the activity to make it yours?
  - ▶ Where does it fit into science?



## Slide 34

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**KF9**

<http://www.ncga.com/uploads/useruploads/cornusesposter.pdf> This chart might make a good handout.  
Kelsey Faivre, 5/11/2015