

Technology Adoption in Ag

Factors Effecting Rate of Adoption and Examples

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Why do businesses adopt technology?



Why do businesses adopt technology?

- ◆ **Improve their bottom line**
 - ◆ **Improved yield and/or revenue per acre**
 - ◆ **Reduce economic risks**
 - ◆ **Reduce cost both - variable and fixed**

Why do businesses adopt technology?

Improved yield and/or revenue per acre

- ◆ **Higher yield more to sell**
- ◆ **Better quality higher prices**
- ◆ **Optimize revenue from a fixed resource (land)**

Why do businesses adopt technology?

- ◆ **Reduce economic risks**
 - ◆ **Reduce yield and quality variation**
 - ◆ **Reduce the possibility of crop failure**

Why do businesses adopt technology?

- ◆ **Reduce cost both - variable and fixed**
 - ◆ **Make optimal utilization of other inputs (seed, fertilizer, water, crop protection,..)**
 - ◆ **Replacement for labor (fixed and variable)**
 - ◆ **Replacement for land**

What influences adoption of technology?

- ◆ **Three general categories of technology**
 - ◆ **Capital intensive**
 - ◆ **Management intensive**
 - ◆ **Capital and management intensive**

What influences adoption of technology?

- ◆ **Capital intensive**
 - ◆ **Age**
 - ◆ **Size**
 - ◆ **Degree of specialization**

What influences adoption of technology?

- ◆ **Management intensive**

- ◆ **Education**

- ◆ **Size**

What influences adoption of technology?

- ◆ **Capital and management intensive**
 - ◆ **Age**
 - ◆ **Education**
 - ◆ **Credit reserves**
 - ◆ **Size**
 - ◆ **Increased use of hired labor**

Other influences on adoption of technology?

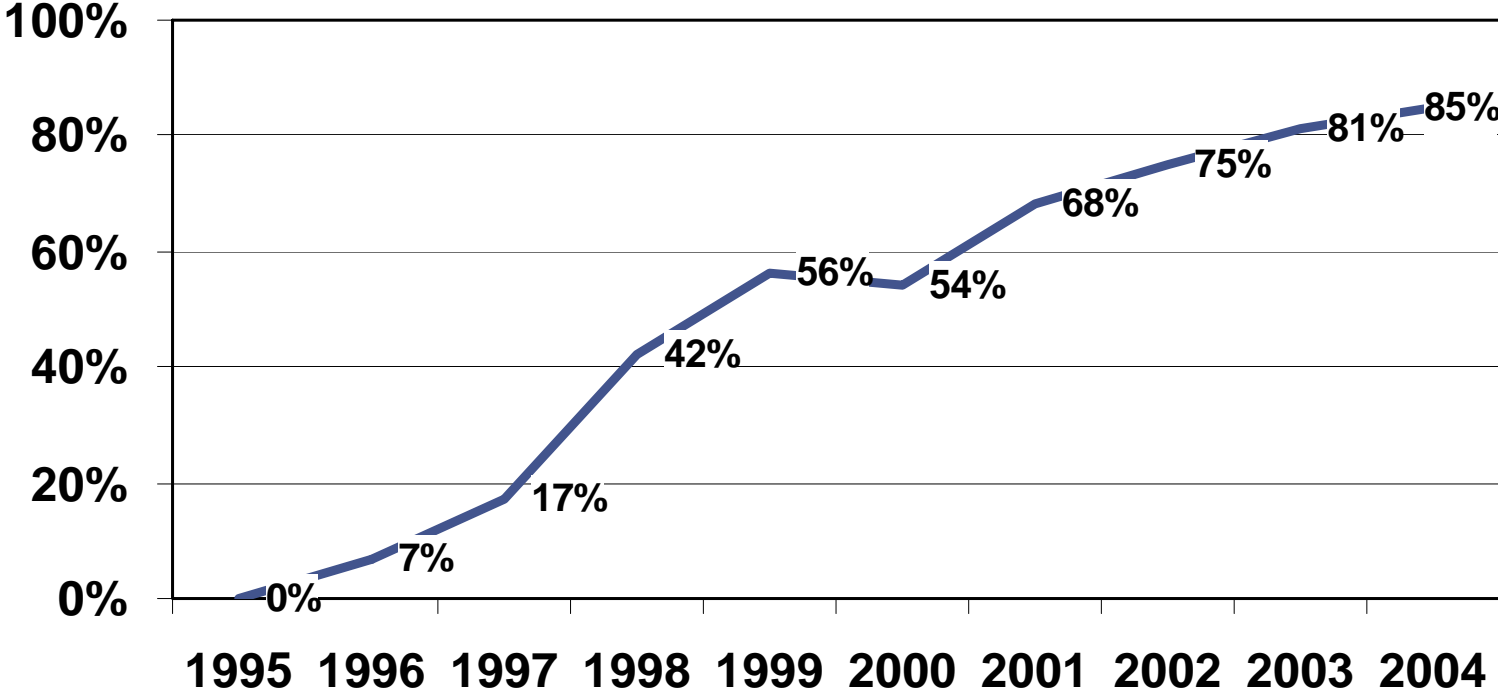
- ◆ **Product supply**
- ◆ **Information technical support**
- ◆ **Buyer influence**
- ◆ **Trade implications**
- ◆ **Public opinion/perception**

Examples of adoption of technology?

- ◆ **GMO crops**
 - Herbicide resistant
 - Bt Traits
- ◆ **Conservation Tillage**
- ◆ **Bovine somatotropin**

Examples of adoption of technology?

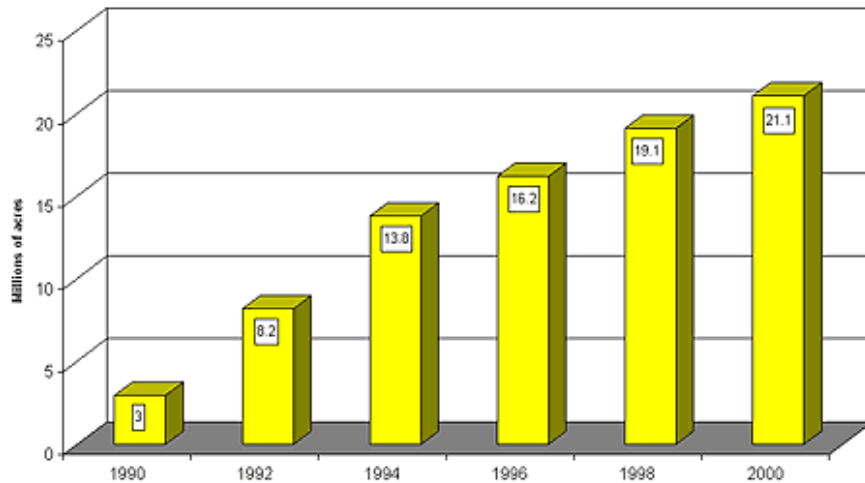
Herbicide Tolerant Soybean Adoption (GMO Varieties) (Percent)



Examples of adoption of technology?

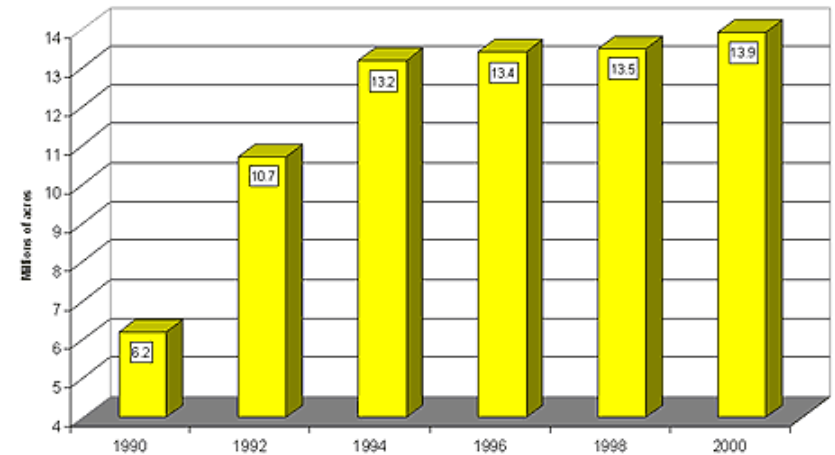
No-Till Soybean Adoption in the U.S.

1990 - 2000



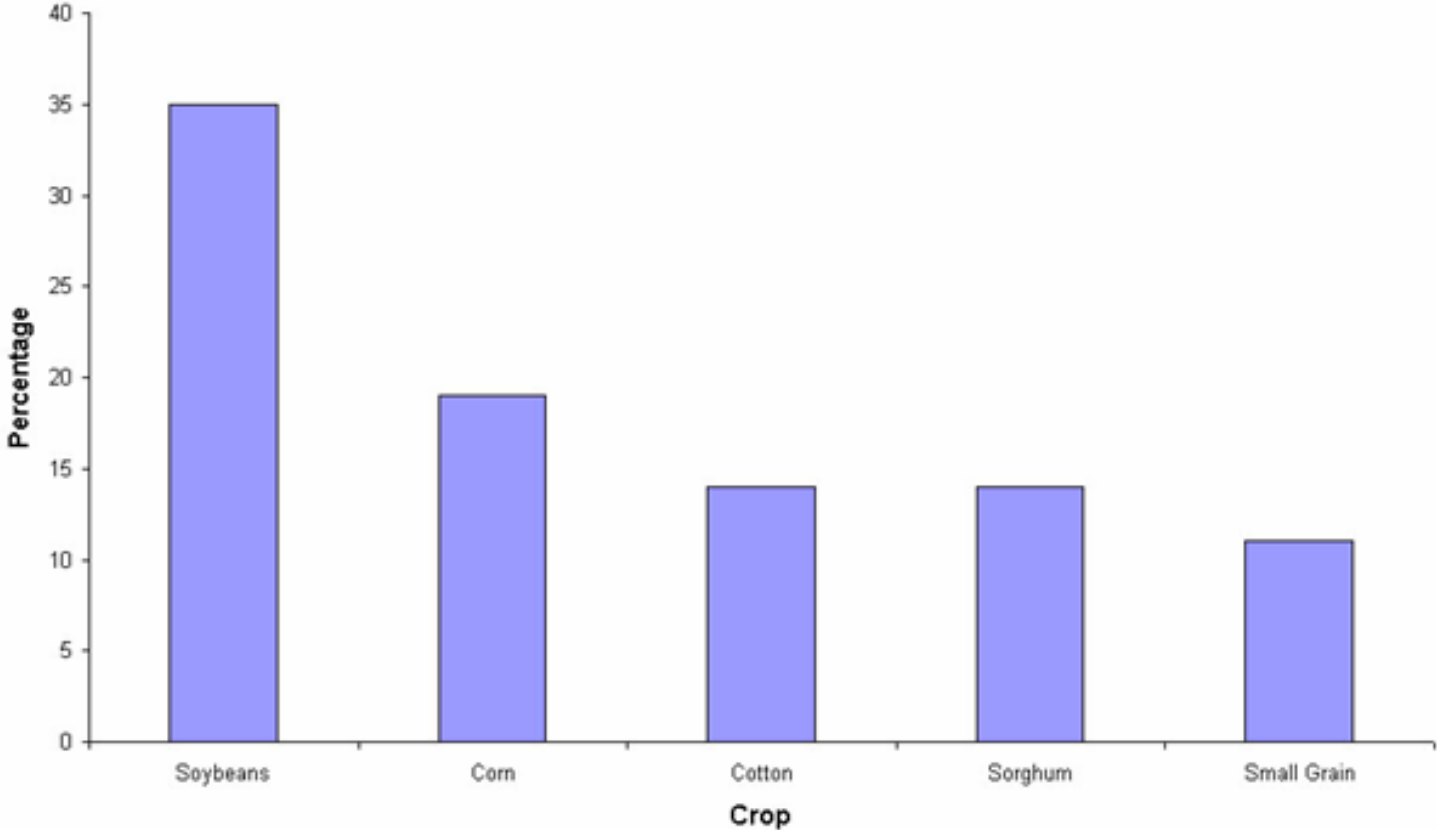
No-Till Corn Adoption in the U.S.

1990 - 2000



Examples of adoption of technology?

Percentage No-till Acres by Crop 2002



Now go apply what you've learned?

