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SOUTHEASTERN BLUEBERRY GROWERS' WILLINGNESS TO ADOPT ALTERNATIVE PRODUCTION  
PRACTICES

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# SOUTHEASTERN BLUEBERRY GROWERS' WILLINGNESS TO ADOPT ALTERNATIVE PRODUCTION PRACTICES

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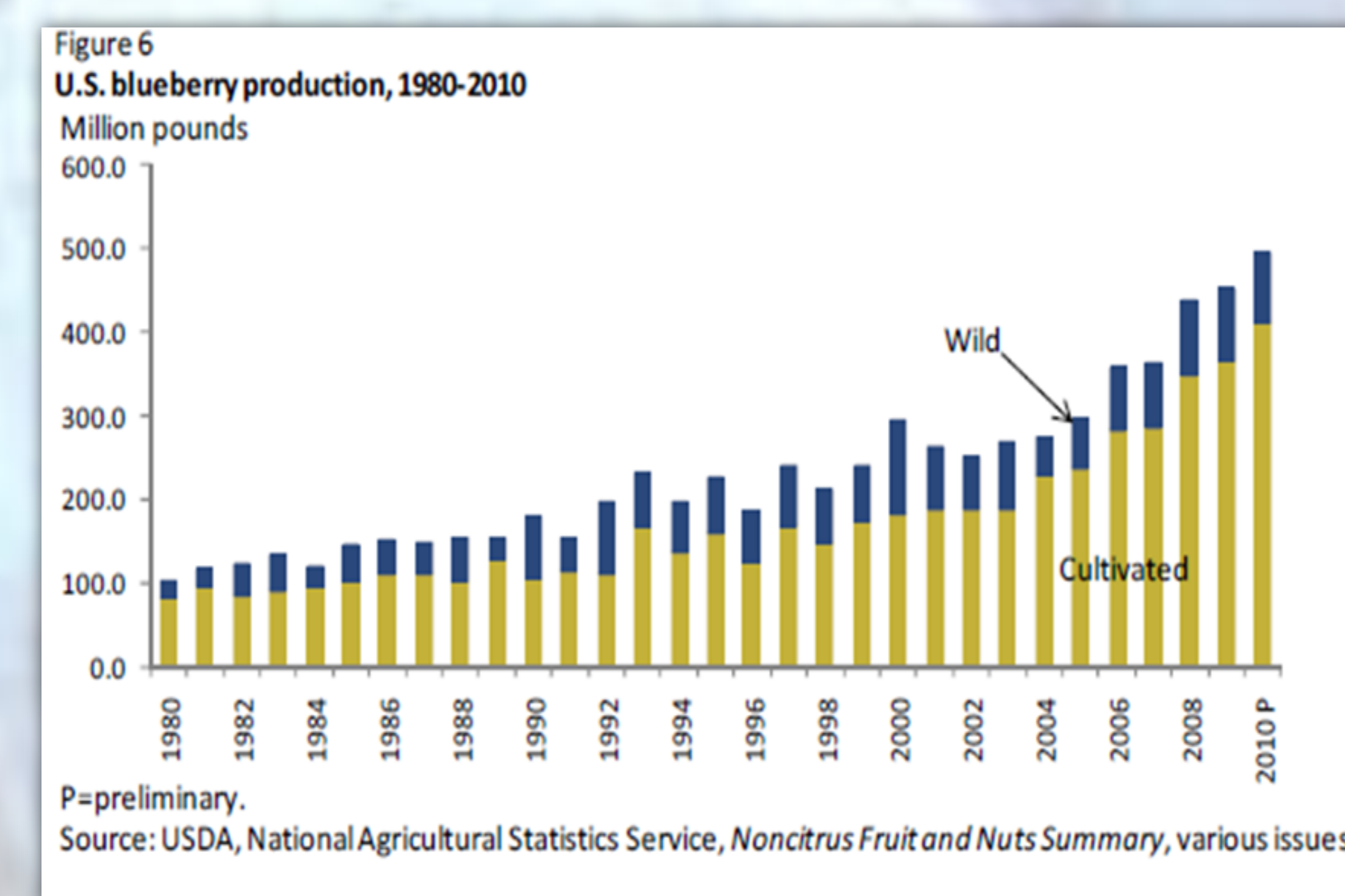
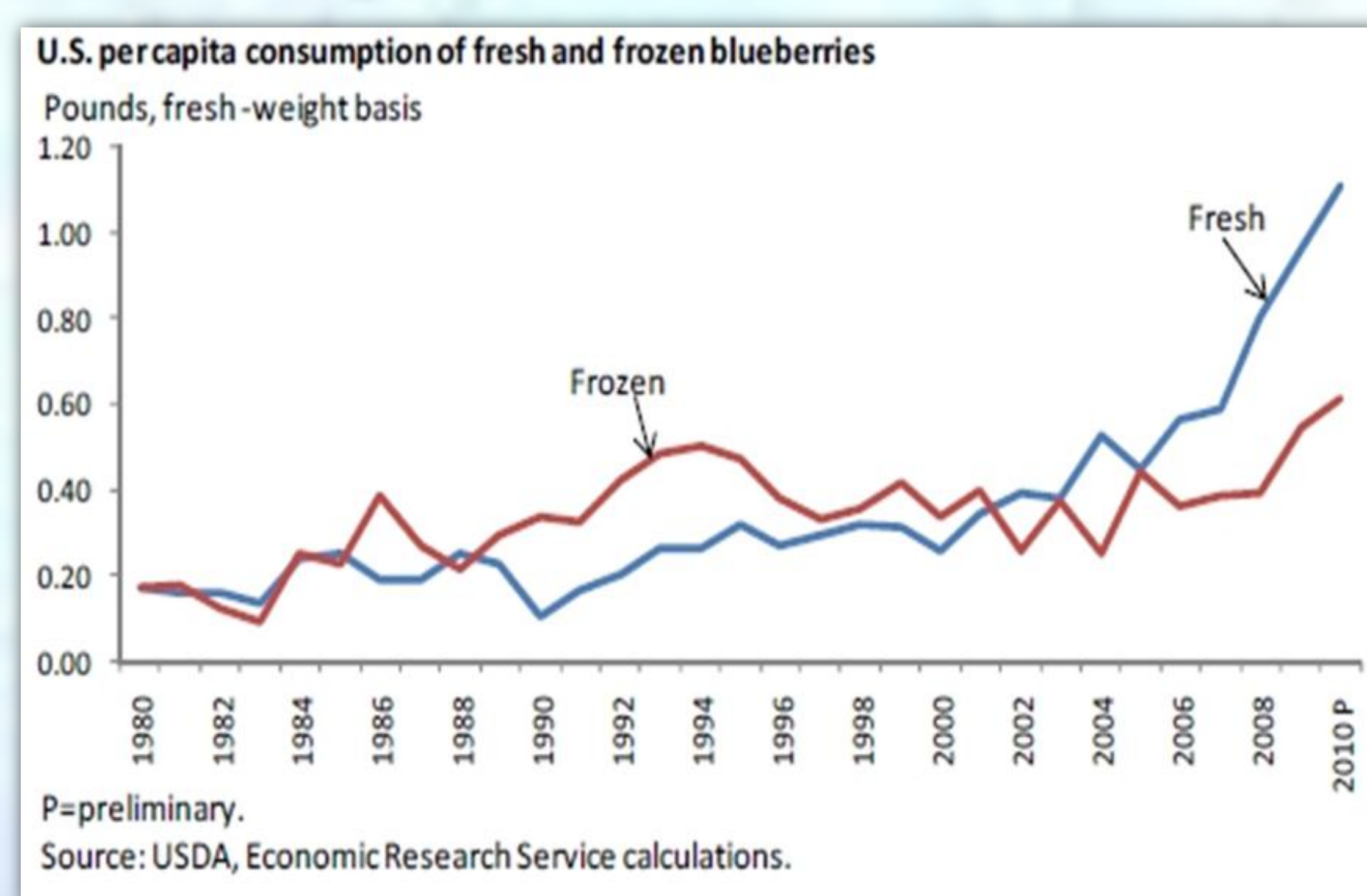


## Introduction

On August 16, 2000, the Blueberry Promotion, Research, and Information Order was enacted under the Commodity Promotion, Research, and Information Act of 1996, to promote, research and inform the general public to expand the markets for fresh blueberries.

Although demand for blueberries has doubled in the past decade, the flood of new growers and added plantings threaten the potential for sustained profitability in the industry.

The purpose of this research is to investigate the factors that influence blueberry producers' decision to adopt the alternative productions practices related to organic blueberry production. A mail survey questionnaire was distributed to members of four southeastern state blueberry associations following Salant and Dillman's recommended design and methodology protocols.



Perez, et al. (2011)

## DID YOU PLANT OR PRODUCE ORGANIC BLUEBERRIES IN 2010?

NO

How likely are you to CONSIDER planting organic blueberries in the NEXT FIVE years? Please circle the number indicating your likelihood:

0-----1-----2-----3-----4  
[Very Unlikely----Very Likely]

YES

Planted \_\_\_ number of acres of organic blueberries in 2010

Produced \_\_\_ number of acres of organic blueberries in 2010

## Models

**MODEL 1:** A binary logit model to determine those factors that explain the farm and farmer characteristics that had established 2010 organic production/planting practices.

$$\log \left[ \frac{P(y|\mathbf{x})}{1-P(y|\mathbf{x})} \right] = \alpha + \mathbf{x}'\beta$$

Where:

y=1, yes (planted or produced organic blueberries in 2010); 0, no (2010 organic production/plantings)  
x=explanatory variables

**MODEL 2:** A multinomial logit model to determine those factors that explain the farm and farmer characteristics for those growers that answered "no, I did not produce/plant organic blueberries in 2010" that expressed some degree of future likelihood of organic production/plantings.

$$\text{logit} \left[ P(y|\mathbf{x} \leq j) \right] = \log \left[ \frac{P(y|\mathbf{x} \leq j)}{1-P(y|\mathbf{x} \leq j)} \right] = \alpha_j + \mathbf{x}'\beta, \quad j = 1, \dots, J-1$$

Where:

y= 0-4 (degree of likelihood of planting organic blueberries in the next five years)

x = explanatory variables

Explanatory Variables: 1=used in Model #1; 2=used in Model #2

- years experience<sub>1,2</sub>
- total acres<sub>1,2</sub>
- transfer of ownership to non-family member (1=yes)<sub>1</sub>
- transfer of ownership to family member (1=yes)<sub>1</sub>
- education level (1=college graduate, some graduate school, completed graduate school)<sub>1,2</sub>
- gender (1=male)<sub>1,2</sub>
- age<sub>1,2</sub>
- average yield per acre 2010 production (divided by 1000)<sub>1,2</sub>
- average fresh price received for 2010 blueberries<sub>1</sub>
- used informational resources from university personnel (1=yes)<sub>1</sub>
- concern about average price for 2011 season relative to other blueberry growers (1=more concerned)<sub>1,2</sub>
- concern about stability of price for 2011 season (1=more concerned)<sub>1,2</sub>
- percent of land/establishment costs financed in 2010<sub>1,2</sub>
- percent of 2010 income generated from blueberry production and other farm production areas<sub>1,2</sub>
- willingness to accept risk relative to other growers (1=more willing)<sub>1,2</sub>
- race (1=white)<sub>1</sub>
- Florida, Georgia, Mississippi dummies (North Carolina=base)<sub>1,2</sub>
- number of times purchased crop insurance since 2000 (1=seven or more)<sub>1,2</sub>
- Number of informational sources used<sub>2</sub>
- transfer of ownership (1=yes)<sub>2</sub>
- Hispanic descent (1=yes)<sub>2</sub>

## Conclusions and Discussion

### Growers that had 2010 organic production practices (MODEL 1)

➤ Larger blueberry farms, planned farm succession, obtained higher fresh prices in 2010, less years experience, females, other growers not of the white race, did not obtain information from university personnel, less educated, purchased crop insurance less, growers from other states besides Georgia

➤ **Growers that had no 2010 organic production and indicated some likelihood of adopting in the next 5 years (MODEL 2)**

➤ Willing to take risks, planned farm succession, more concerned about price stability of blueberries, Hispanic ancestry, used less informational sources, lower average yield per acre, less concerned about average price of blueberries, less land/establishment costs, purchased crop insurance less

### Combined model findings

➤ Transfer of operation ownership, crop insurance behavior

➤ **Growers' risk behavior is significant in adoption behavior**

➤ **Unique work by observing the growers' likelihood behavior of adoption in the future**

### References:

- Perez, Agnes, Kristy Plattner, Katherine Baldwin, and Erik Dohlman. "U.S. Citrus Production Forecast up this Season." U.S. Department of Agriculture, Economic Research Service, 30 March 2011.  
Salant, Priscilla, and Don A. Dillman. 1994. *How to Conduct Your Own Survey*. New York: John Wiley & Sons, Inc.

## Econometric Results #1

Explanatory Variable	Yes, (1) did plant or produce organic blueberries in 2010
Years Experience	-0.54
Total Acres	0.06
Dummy: Transfer to non-family	7.91
Dummy: Transfer to family	4.13
Dummy: Education	-6.53
Gender	-20.99
Average Fresh Price	3.23
Dummy: University Personnel	-12.83
Dummy: Concern Stable Price =2-4	-3.54
Dummy: Concern Average Price =3-4	-16.32
Financed land/establishment costs	10.03
Dummy: Race=White	-15.75
Dummy: Willingness to Accept Risk=3-4	7.82
Georgia	-9.26
Dummy: Crop Insurance=3-4	-19.58

## Econometric Results #2

Explanatory Variable	No, with no likelihood					No (some degree of likelihood to plant/produce organic blueberries in the next five years)				
	Prob (y x=1)	Prob (y x=2)	Prob (y x=3)	Prob (y x=4)	Prob (y x=5)	Prob (y x=1)	Prob (y x=2)	Prob (y x=3)	Prob (y x=4)	Prob (y x=5)
Variable										
Years Experience	0.39	-0.11	-0.13	0.11	-0.05					
Total Acres	-0.03	0.01	0.01	0.01	0.00					
Number of informational sources	6.37	-1.69	-2.15	-1.75	-0.78					
Dummy: Willingness to Accept Risk=3-4	-13.99	3.712	4.72	3.84	1.71					
Dummy: Transfer ownership	-22.62	6.00	7.64	6.21	2.77					
Gender	18.91	-5.02	-6.39	-5.19	-2.31					
Age	0.53	-0.14	-0.18	-0.15	-0.07					
Average Yield	2.11	-0.56	-0.71	-0.58	-0.26					
Average Fresh Price	-2.20	0.58	0.74	0.60	0.27					
Dummy: Concern Stable Price =2-4	-23.14	6.14	7.81	6.36	2.83					
Dummy: Concern Average Price=2-4	31.72	-8.42	-10.71	-8.71	-3.88					
Financed land/establishment costs	17.09	-4.53	-5.77	-4.69	-2.09					
Dummy: Hispanic Ancestry	-52.80	14.01	17.83	14.50	6.46					
Total Farm Income	-7.02	1.86	2.37	1.93	0.86					
Florida	13.06	-3.47	-4.41	-3.59	-1.60					
Mississippi	10.91	-2.89	-3.68	-3.00	-1.33					
Dummy: Crop Insurance=3-4	16.30	-4.32	-5.50	-4.48	-1.99					