

# Grape Acreage & Variety Trends

*What is the future for the Midwest?*

Dr. Bruce Bordelon  
Purdue University

# Wine Production in the Midwest

- Tremendous growth in the past 10 years
  - Number of wineries and acres of grapes
- Over 300 wineries in the Midwest  
(14 states: AR, IL\*, IN\*, IA, KN, KY, MI\*, MN, MO\*, NE, OH\*, OK, TN, WI) \*over 20 wineries each
- 18,000 acres of grapes
- 3 mil gallons of wine
- Good opportunity
  - Alternative “Specialty” crop
  - Value-added product

# Indiana Fruit Survey Results: Grapes



**USDA, NASS, INDIANA FIELD OFFICE**

**Greg Preston**

**January 24, 2006**

# USDA, NASS, Indiana Field Office Mission

To provide timely, accurate, and useful statistics of U.S. agriculture.

**Data Collection:** We conduct weekly, monthly, quarterly, annual, and special surveys in cooperation with Purdue. Data is collected by mail, telephone, electronically and through personal interview. Every 5-years we also administer the official Census of Agriculture.

**Basic Principles:** Data is published and made available to everyone under strict **Confidentiality**, and **Security** regulations.

# **Fruit Survey Overview**

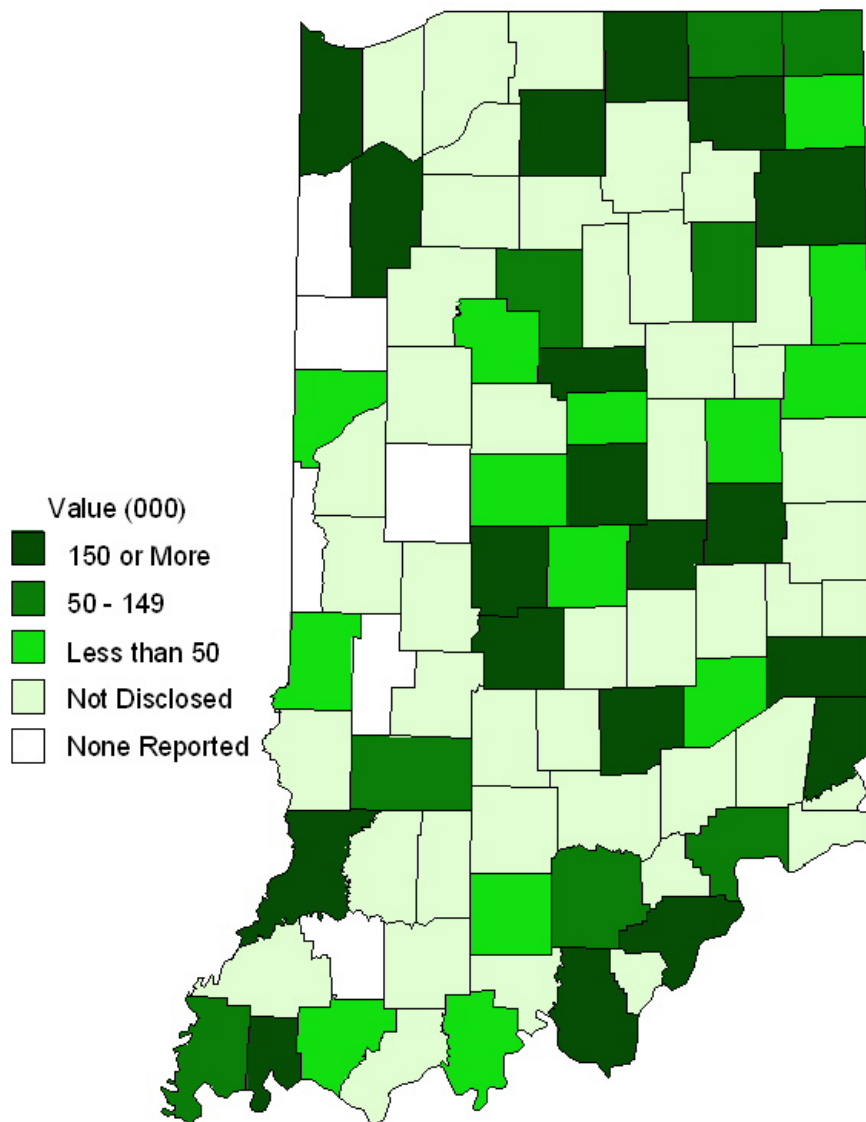
- **The last fruit survey was conducted in 1990**
- **For 2004 we mailed 1017 questionnaires, with telephone follow-up**
- **Final response rate was almost 80%**
- **Better coverage than the 1990 survey**

# Census Data Value of Fruit Sales

2002 = \$15,787,000

1997 = \$12,837,000

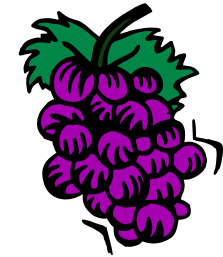
23% increase



## Grape Operations

	2004	1990
• Number of Operations .....	93	50
• Number of Acres.....	418	82
• Acres per Operation .....	4.5	1.6

# Grape Operations – Census Data



2002 Farms = 137

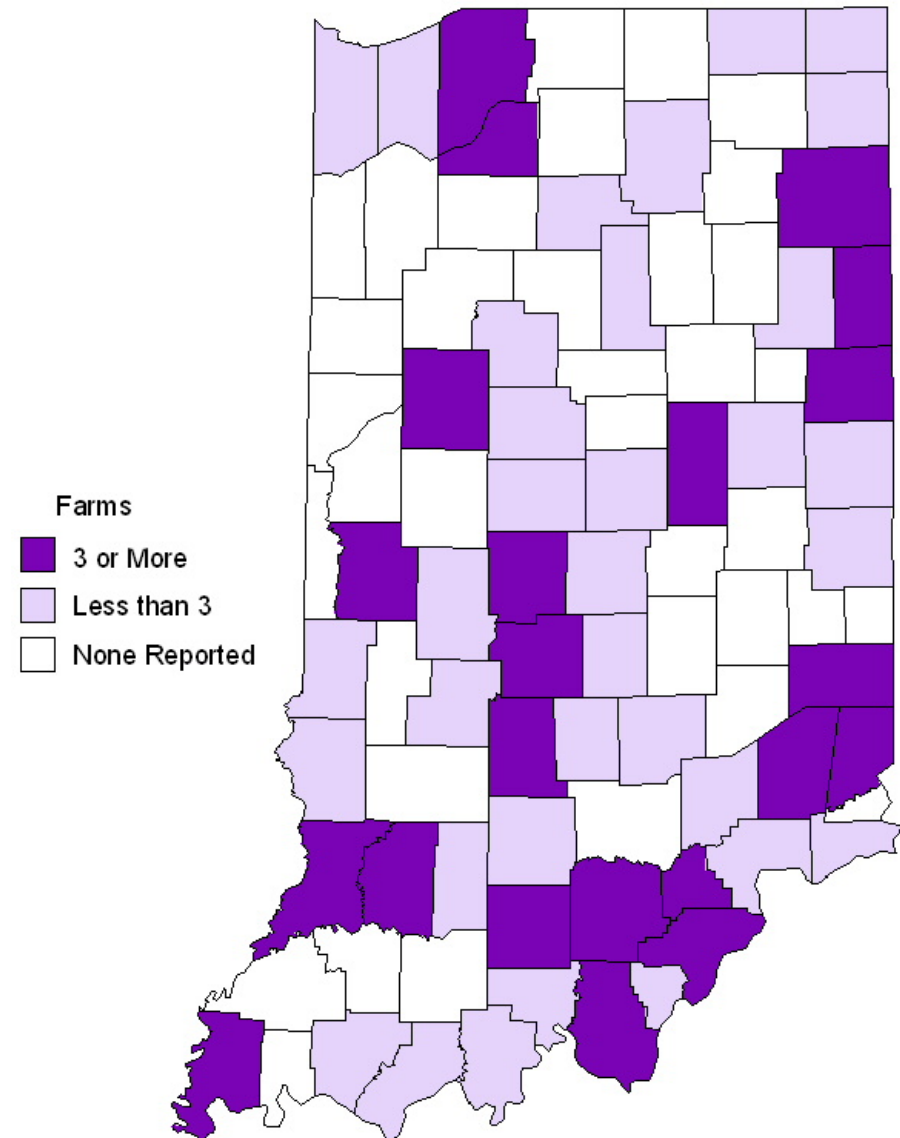
1997 Farms = 174

21% decrease

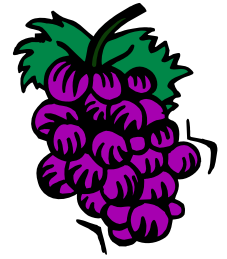
2002 Acres = 559

1997 Acres = 451

24% increase

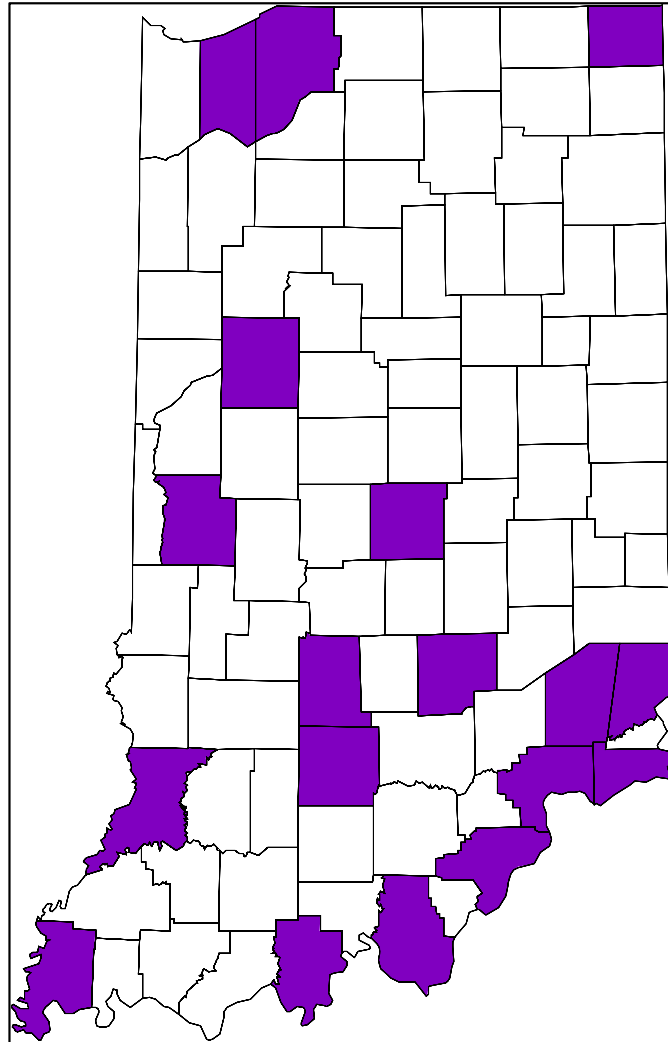


# Counties With More Than 5 Acres of Grapes

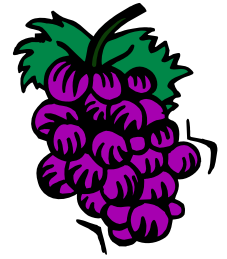


2004 = 418 Acres

1990 = 82 Acres



# Grape Operations - Number by Region

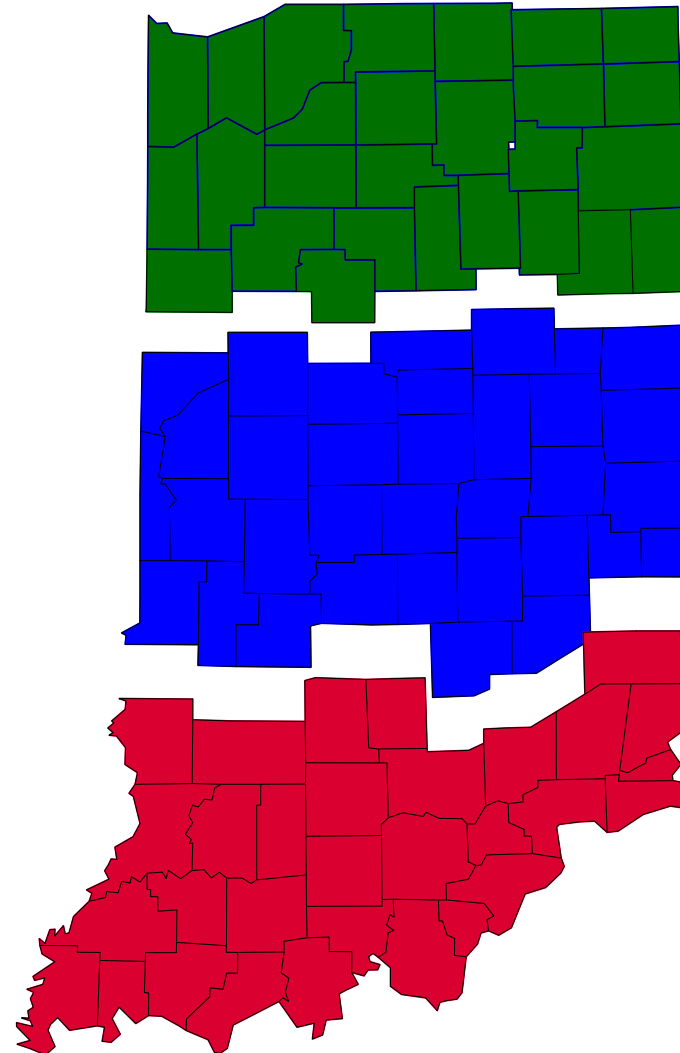


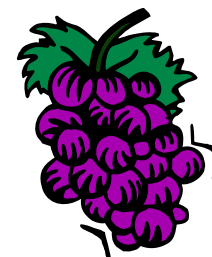
2004 = 93

North = 23

Central = 26

South = 44





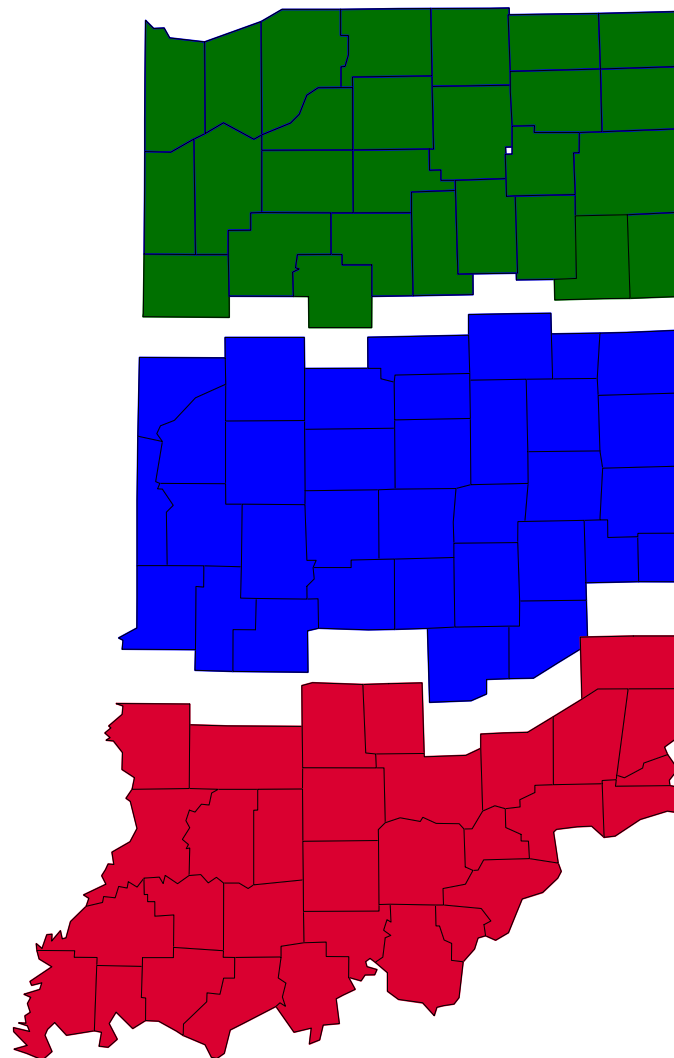
## Land in Grapes - Number by Region

2004 = 418 Acres

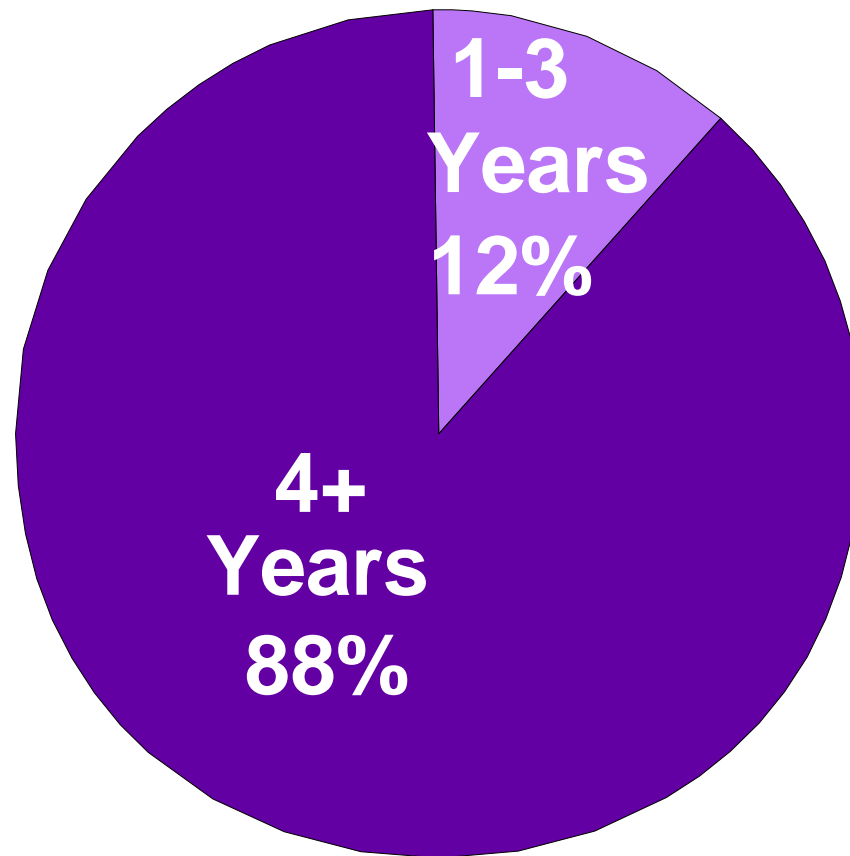
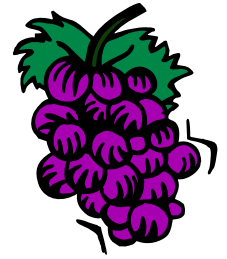
North = 126

Central = 51

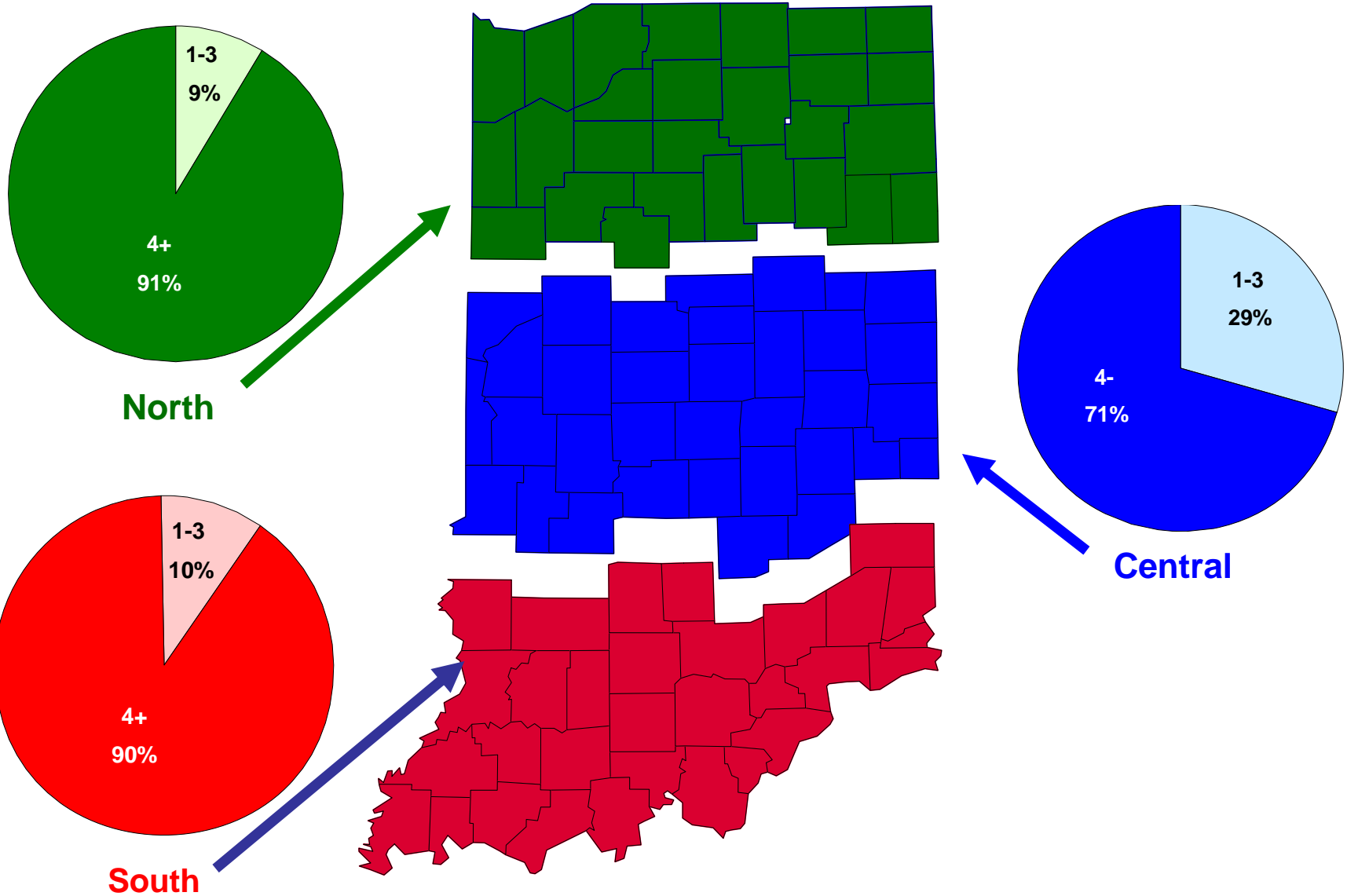
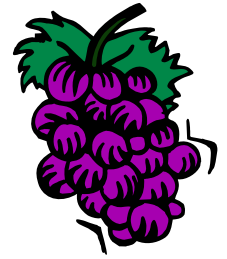
South = 241

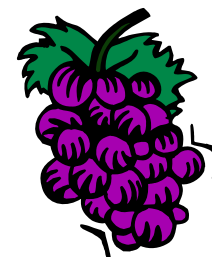


# Age of Vines

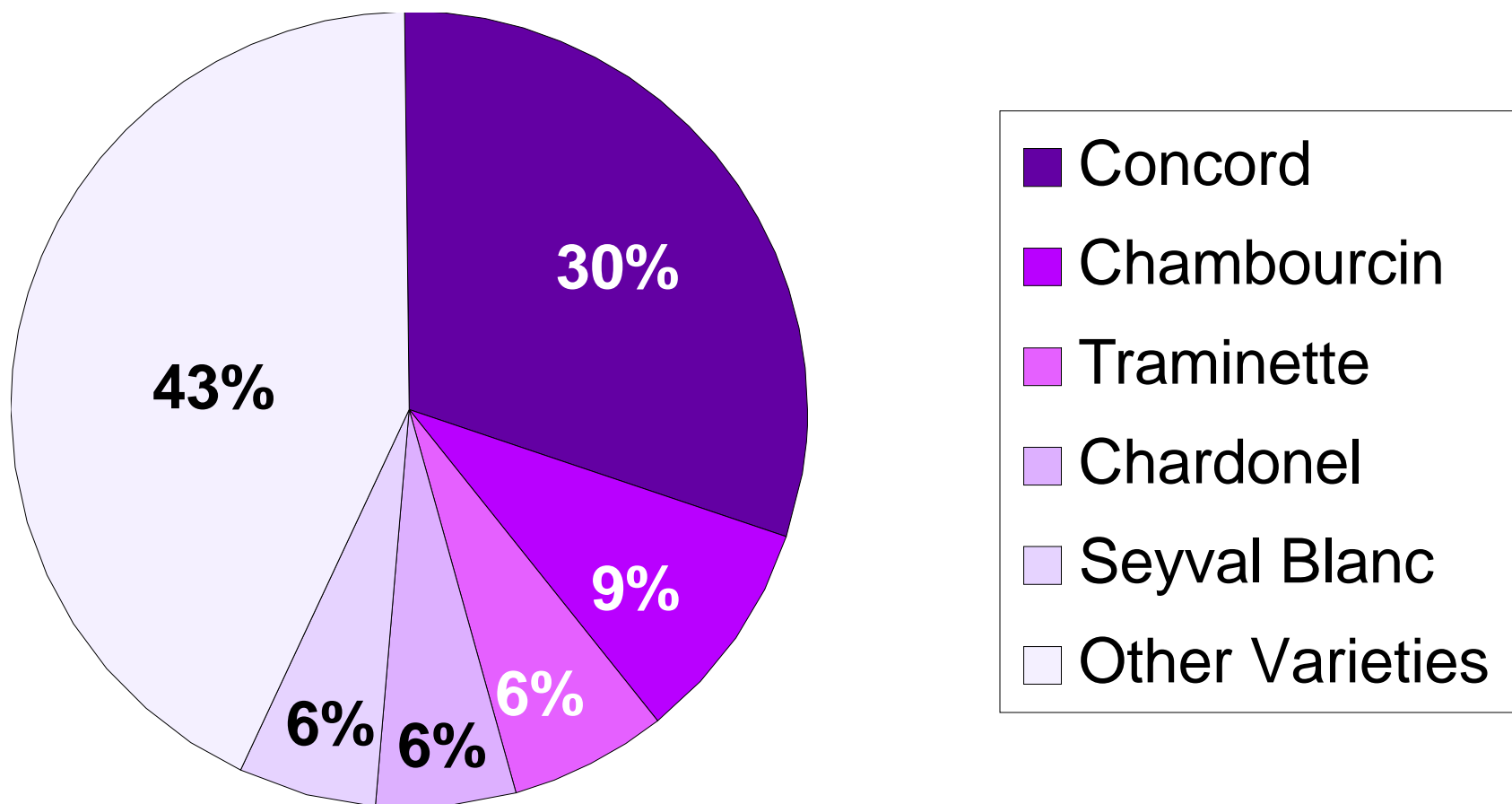


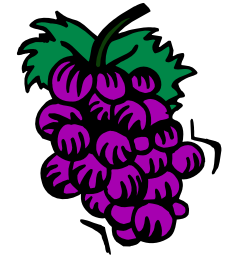
# Age of Vines by Region





## Top Grape Varieties





## Top Grape Varieties

2004 = 418 Acres

<u>Variety</u>	<u>Acres</u>
Concord	126
Chambourcin	38
Traminette	26
Chardonel	24
Seyval Blanc	23
Vidal Blanc	20
Vignoles	19
Foch	18
Steuben	15
Catawba	14
Cayuga White	14
Niagara	14
Other Varieties	67



The first census of agriculture was taken in 1840



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## Indiana office of USDA's NASS



USDA's NASS Indiana Field Office is operated in cooperation with the Purdue University College of Agriculture.

### Indiana Statistics

**Quick Stats** ([ag statistics by state and county](#))

Provides the most up-to-date statistics including all revisions.

- [County Estimates](#)
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# Economics and Marketing

- Establishment costs
- Production costs
- Grape prices
- Profit potential

# Crop Budgets


University of Kentucky New Crop Opportunities Center Decision Aids  
http://www.uky.edu/Ag/NewCrops/budgets.html

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**Crop budgets**

**Asparagus**  
[2005 Sample Asparagus Production Budget for Kentucky](#)

**Berries**  
[2001 Kentucky Blackberry Cost and Return Estimates](#)  
[2002 Blueberry Cost and Return Estimates Summary](#)  
[2002 Kentucky Highbush Blueberry Production Budgets - Wholesale/Retail Marketing](#)  
[2002 Kentucky Highbush Blueberry Production Budgets - Pick Your Own Marketing](#)  
[Kentucky Strawberry Profitability Estimated Costs and Returns](#)

**Field crops**  
[Enterprise Budgets](#)

**Flower crops**  
[Greenhouse Cost of Production Budgets](#)  
For bedding plants, fuschia, geraniums, New Guinea Impatiens, potted mums and garden mums, from Rutgers Cooperative Extension

**Gourds**  
[Ornamental Gourd Production in Kentucky](#)

**Grapes**  
[2005 Grape Cost and Return Estimates: Summaries and Assumptions](#)  
[2005 KY Grape Production Budgets - Vinifera Wine Grape Varieties](#)  
[2005 KY Grape Production Budgets - French-American Hybrid and American Wine Grape Varieties](#)  
[2005 KY Grape Production Budgets - Table Grape Varieties](#)

Purdue Fruit and Vegetable Connection  
http://www.hort.purdue.edu/fruitveg/fruit/grapes.shtml

PURDUE UNIVERSITY  
Department of Horticulture and Landscape Architecture  
Purdue Fruit and Vegetable Connection

**Grapes**

Indiana has about 560 acres of grapes in production with over half grown specifically for wine. The state has 32 wineries that produce over 450,000 gallons each year. The Indiana Wine Grape Council supports the grape and wine industry through research, education, and market development. For more information about Indiana's wine industry, visit [www.indianawines.org](http://www.indianawines.org).

**Grape Production**

[Midwest Grape Production Guide \(OSU Bul. 919\)](#)  
[Growing Grapes in Indiana \(HO-45\)](#)  
[Grape Varieties for Indiana \(HO-221\)](#)  
[Starting a Commercial Winegrape Vineyard \(pdf\)](#)  
[Sources of Information and Supplies for Commercial Grape Growers \(pdf\)](#)  
[Grape Crop Profile - IN](#)  
[Wine and Juice Grape Varieties for Cool Climates - NY](#)  
[Table Grape Varieties for Cool Climates - NY](#)  
[Mid-Atlantic Wine Grape Growers's Guide](#)  
[Commercial Grape Varieties for Virginia](#)

**Pest Management**

[Midwest Small Fruit Pest Management Handbook \(OSU Bul. 861\)](#)  
[Midwest Small Fruit and Grape Spraying Guide](#)  
[Controlling Pests in the Home Fruit Planting \(ID-146\)](#)  
[Controlling Diseases and Insects in Home Fruit Plantings - OH](#)  
[Pesticide Information - CDMS Site](#)

**Economics and Marketing**

[Economics of Winegrape Production \(pdf\)](#)  
[2005 Kentucky Grape Production Budgets - French Hybrids](#)  
[2005 Kentucky Grape Production Budgets - Vinifera](#)  
[2005 Kentucky Grape Production Budgets - Table Grapes](#)  
[2004 Regional Wine Grape Price Survey](#)  
[Grape Enterprise Budget - Ohio](#)  
[Agricultural Marketing Service Market News Reports](#)

**Produce Quality**

[Purdue Produce Quality Site](#)

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# Cost of Vineyard Establishment

Varies due to site preparation expense, land value, etc.

- \$7,000-9,000 / acre over 3 years w/o land costs
- \$10,000-12,000 / acre including land & equipment
  - 40% labor, 60% materials

# Annual Production Cost

## During establishment cost recovery

\$2000-2500 per acre per year

- Includes interest on accrued expense

## After establishment cost recovery

\$1500-2000 per acre per year

- Labor (58%)
- Materials (fertilizer, pesticides) (23%)
- Equipment operation expenses (17%)
- Interest on operating expenses (2%)

# Vineyard Profitability

Profit (\$/acre) = (income - expenses)  
[Yield (tons/acre) x Price (\$/ton)] - Production Costs

Problem: High establishment costs and 3-4 year wait

- Gross returns are not large enough to quickly overcome production costs and recover establishment costs (and interest)
- Possible yield (or quality) losses in some years

Possible Options:

- Reduce establishment costs
- Get into production quickly
- Increase price of grapes - maximize quality
- Increase yields

## Effects of Yield and Price on Establishment Cost Recovery

- 5 tons/acre @ \$500/ton
    - 23 years to recover establishment costs
  - 5 tons/acre @ \$700/ton
    - 9 years
  - 5 tons/acre @ \$900/ton
    - 7 years
- 
- 6 tons/acre @ \$500/ton
    - 13 years
  - 7 tons/acre @ \$500/ton
    - 10 years
  - 8 tons/acre @ \$500/ton
    - 8 years

# Marketing

Marketing has a direct impact on profitability

Get/pay the highest price for grapes

- Grow high quality fruit
- Written contract - negotiated price
- Profit share with winery
- Partnership with winery

# Value of Grapes in Wine

	Price per ton			
	\$500/ton	\$600/ton	\$700/ton	\$800/ton
\$/bottle	0.67 <sup>a</sup>	0.80	0.93	1.07
\$/gallon	3.33	4.00	4.66	5.33
\$/case	7.99	9.60	11.18	12.79

\$0.13/bottle for each \$100/ton (\$1.00/bottle=\$750/ton)  
 At \$500/ton (\$8/case) grapes = 18% of total cost <sup>b</sup>  
 At \$1,000/ton (\$16/case) grapes = 31% of total cost <sup>b</sup>

<sup>a</sup> Based on 150 gallons of finished wine per ton

<sup>b</sup> Based on \$35/case to produce (not counting grape cost)

# Impact of Fruit/Wine Quality of Value

- An increase in sales price of \$1.00 per bottle is equivalent to \$750 per ton.
- Premium quality fruit is more difficult to achieve, more expensive to produce.
- Negotiate a premium for “vintage” years to help through the “non-vintage” years that are sure to come.

# 2004 Regional Grape Price Survey

University of Kentucky

Cultivar	Ave Price/ton	Price Range
Concord	504	300-600
Niagara	548	300-800
Norton	945	800-1000
Cayuga White	654	450-800
Chardonel	889	700-1000
Traminette	955	700-1000
Vidal	761	600-900
Vignoles	931	900-1000
Seyval	755	600-900
Foch	799	700-1000
Chambourcin	876	800-1000
Cab Sauvignon	1250	1200-1500
Cab Franc	1350	1200-1500
Chardonnay	1293	1300-1500

# Yield and Price Combinations

Cultivar	Yield (tons/acre)	Price/ton (\$)	Income (gross \$/a)
Norton	4.0	945	3780
Cayuga White	7.7	654	5036
Chardonel	3.6	889	3200
Traminette	3.9	955	3724
Vidal	4.8	761	3653
Vignoles	3.6	931	3352
Seyval	5.0	755	3775
Foch	5.7	799	4554
Chambourcin	4.3	876	3767

Average yields (11 yr) from SWPAC (20% lower plant density ...1.25X)

# Factors that Affect Grape Prices

- Supply and Demand
  - Regional production and demand
  - Restriction on importation
    - higher value for in-state grown grapes
  - AVA (American Viticulture Area, Appellation of Origin)
- Quality
  - Variety (vinifera/hybrid/American)
  - Flavor, sugar, acid, pH
  - Freedom from rots, defects
- Marketing Skill

# Economics Summary

- Vineyard establishment costs \$7,000-9,000 per acre over 3 years
- Overhead costs (land and equipment) vary depending on situation
  - Add \$500 to \$2,000+ per acre per year
- Major expenses:
  - materials and labor during establishment
  - labor during production
- Profitability depends on price & yield
  - Quality is key to high price
  - Partnership with winery

# Summary

- We need more grapes grown in Indiana!!
  - Grapes require lots of labor
  - Grapes are high risk
    - Cold damage from winter cold and spring frosts
    - Diseases, birds, deer, raccoons
- Wineries need to pay a fair price for grapes
  - Bottle price multiplier (10x bottle price/ton)
  - Profit/cost share
  - Bonus for award winning wines, etc