

**A PRELIMINARY STUDY OF
FRESH WILD GINSENG
IN THE STATE OF WISCONSIN---
AN ANALYSIS OF 2005 HARVEST**

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The Purposes of This Study (I):

- 1. To illustrate the distribution of age groups**
- 2. To estimate “drop off” point of surviving population among the different ages to determine what is the optimal harvesting age**
- 3. To compare the differences in size, shape and age from regions in Wisconsin (WI) and out of state (NC)**

The Purposes of This Study (II):

- 4. To understand the average of numbers of fresh root per pound in Wisconsin**
- 5. To find out the percentage of diggers “growing” own patch in Wisconsin**
- 6. To gather other proprietary information: age, size, shape, intactness of neck, future needs of changing drying and packing practices, etc**

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Study Team --- Grading and Recording

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A “Coached” Digger’s Harvest

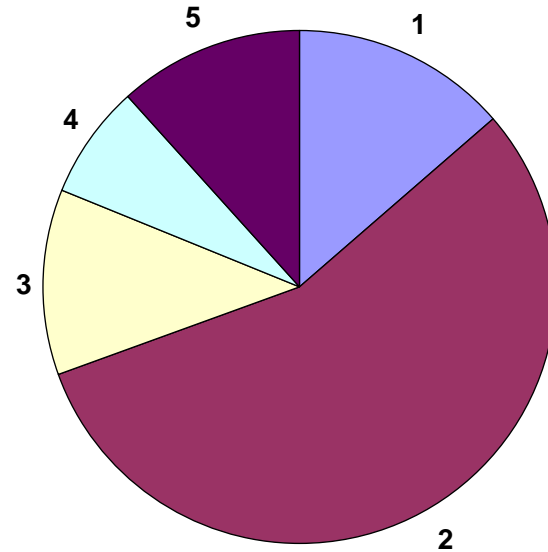
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Intactness of Roots by the “Coached” Digger

Five Different Sampling Regions

1. **Eastern: 13.7%**
2. **S.Western: 66.8%**
3. **Western: 11.7%**
4. **N.Central: 7.0%**
5. **NC: 11.8%**



- **Out of Wisconsin, two third samples of wild ginseng is from this region**

Samples Collection:

- **Samples (1105.6 Lbs) which is about 50% of the total population over 2000 Lbs were randomly selected**
- **#1 to #4 are from the state of Wisconsin representing 4 regions of Wisconsin with a total of over 2,000 Lbs of fresh wild roots**
- **#5 represents approximately 100 Lbs of fresh roots from NC. All 100 Lbs are sampled and studied**

Percentage of Fresh Wild Ginseng aged 10+ and 10-

Original:

*Adjusted for 10+ years old roots and neckless roots

**Not Adjusted for 10+ years old roots and neckless roots

<i>Not Adjusted</i>						<i>Adjusted</i>
Year-old	Eastern	S.Western	Western	N.Central	Average	NC
10+ (%)	76.3%**	69.3%**	53.8%**	72.8%**	68.6%**	82.2%*
10- (%)	23.7%**	30.7%**	46.2%**	27.2%**	31.4%**	17.8%*

Adjusted Percentage of Fresh Wild Ginseng aged 10+ and 10-

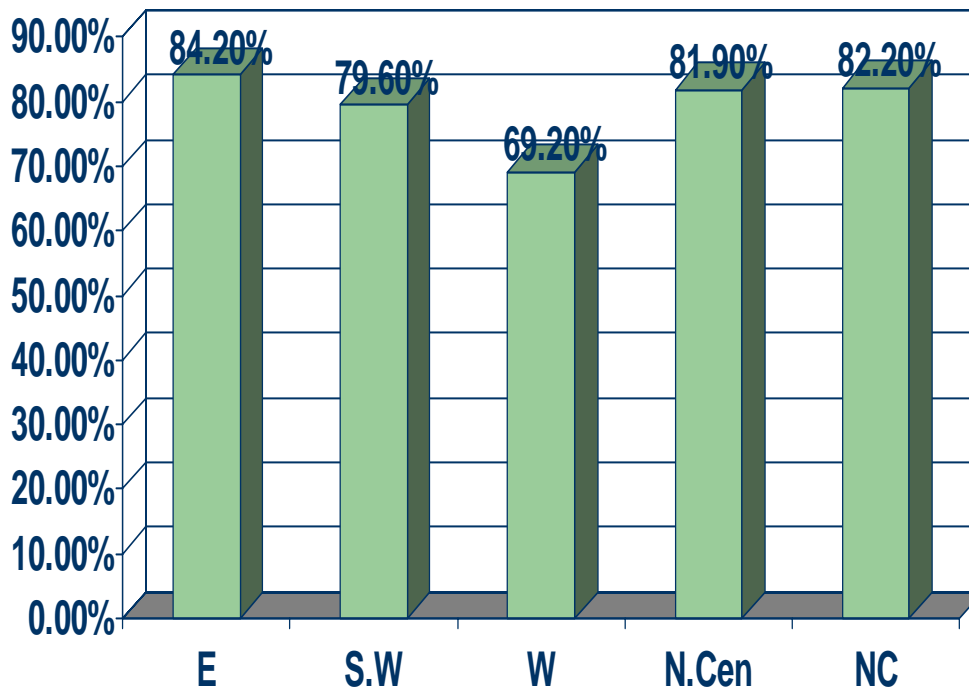
If Adjusted from the original:

<i>Adjusted Partially</i>						<i>Adjusted Fully</i>
Years	Eastern	S.Western	Western	N.Central	➤ Average (WI)	➤ NC
10+	84.2%**	79.6%**	69.2%**	81.9%**	78.7%**	82.2%*
10-	15.8%**	20.4%**	30.8%**	18.1%**	21.3%**	17.8%*

Explanation for Adjusted Data:

- * Final count was double-checked. Adjusted both for 10+ years of roots and neckless roots;
- ** Adjusted only the final counts of 10+ Years roots, but not neckless roots. It is approximately estimated, based on two small amount samples of double-check counts, the final numbers will be reduced by approximately half. Next year's study will concentrate on this area.

Chart 1. Percentage of Fresh Wild Ginseng Aged 10+ (Adjusted Data)



- **NC---**
Both neckless and 10+ years roots
- **WI---**
Only 10+ adjusted, not neckless roots

■ After full adjustment, it is estimated that Wisconsin will be about 90% aged 10+.

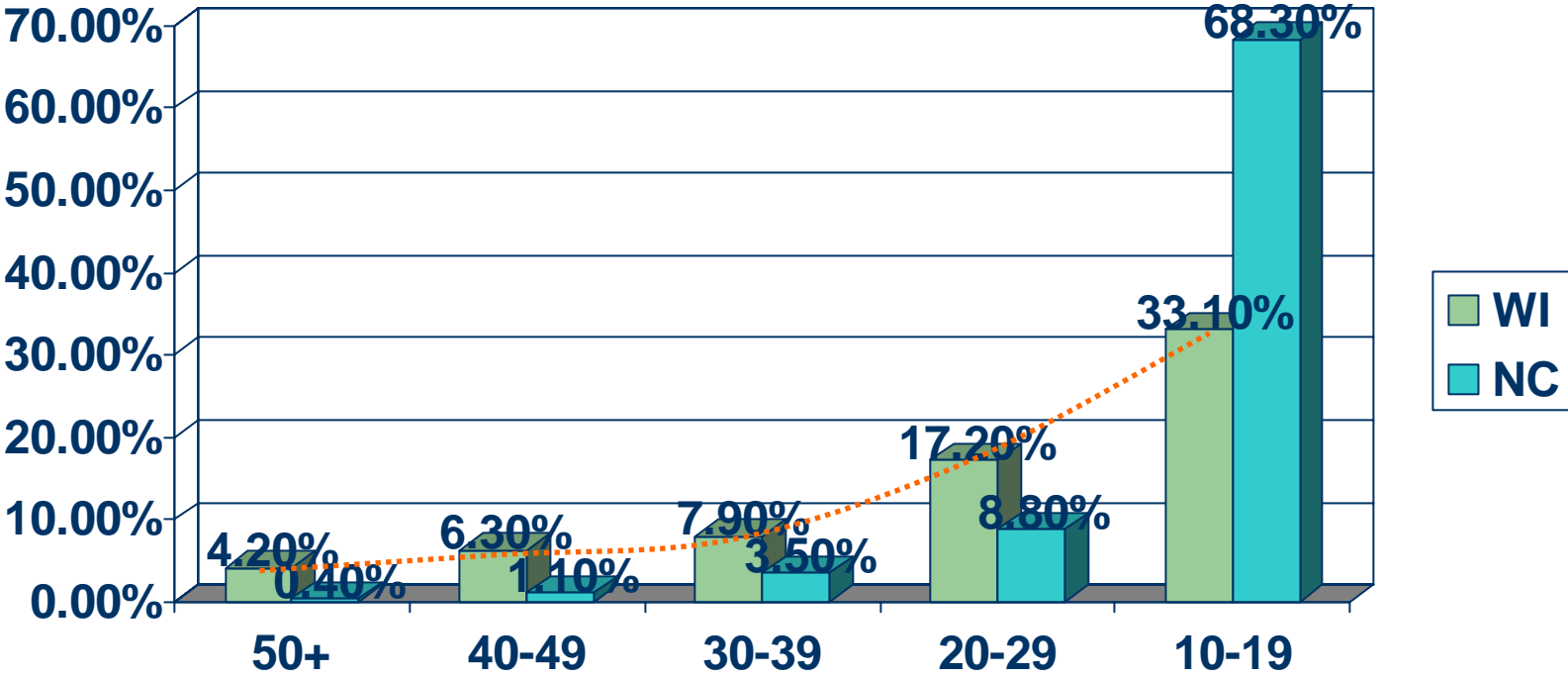
% Distribution by Age Groups

Years	Eastern	S.Western	Western	N.Central	Average (WI)	NC
50+	4.3%	5.1%	1.3%	1.4%	4.2%	0.4%
40-50	5.3%	7.8%	2.3%	2.7%	6.3%	1.1%
30-40	10.5%	8.1%	4.3%	7.0%	7.9%	3.5%
20-30	23.0%	16.7%	12.1%	18.6%	17.2%	8.8%
10-20	33.3%	31.6%	33.8%	43.2%	33.1%	68.3%
5-10	16.2%**	21.4%**	28.8%**	19.9%**	21.4%**	10.4%*
5-	7.5%**	9.3%**	17.4%**	7.3%**	9.9%**	7.4%*

Explanation for Age groups

- **Regional differences in WI: N. Central region diggers are “coached” for the last 18 years by dealer on seed planting and transplanting**
 - **State difference between WI and NC**
- ** It will be about half (10-12%) after fully adjusted for both 10+ years and neckless roots**

Chart 2. Comparing Age Groups between WI and NC



●Wisconsin is not fully adjusted

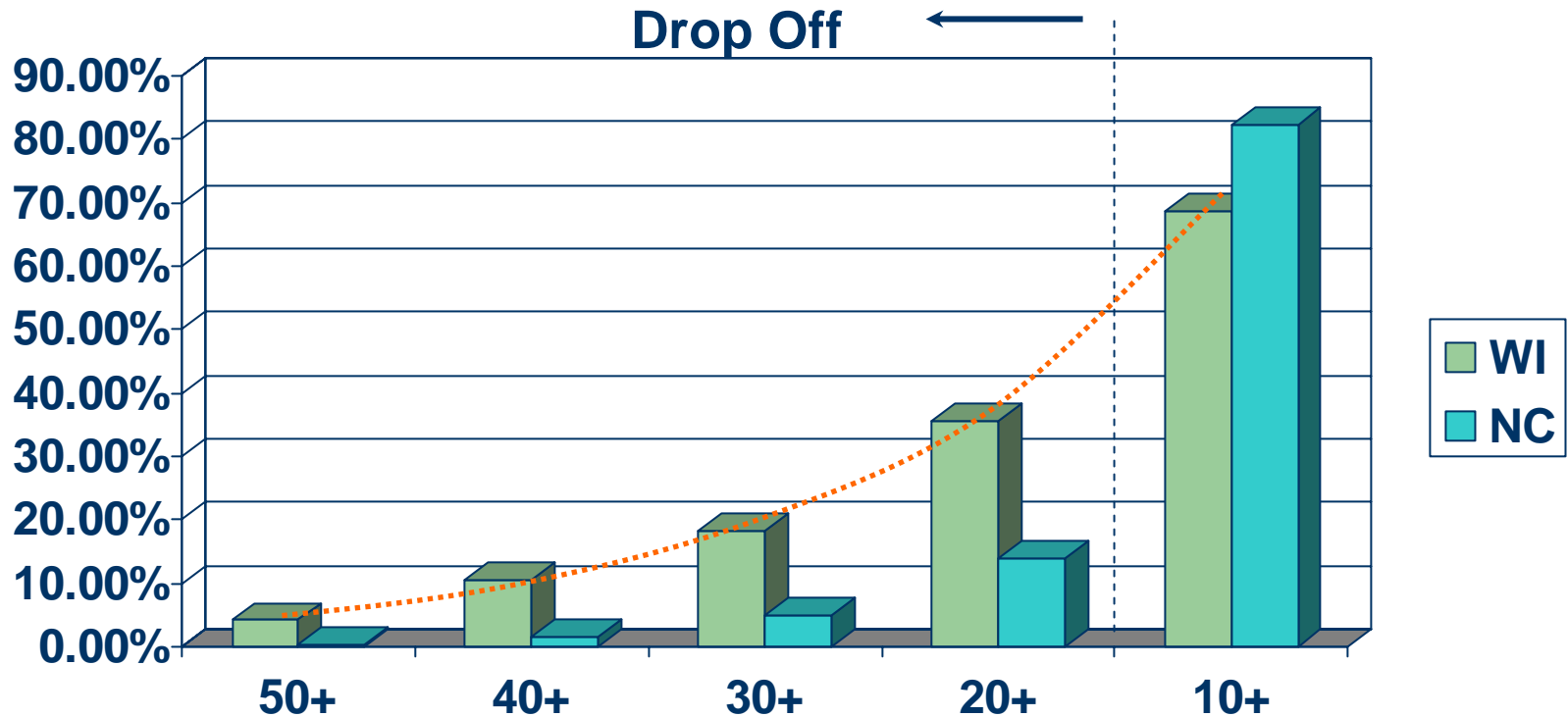
Accumulative Percentage of Ages 10+, 20+, 30+, 40+ and 50+ Years

Years	Eastern	S.Western	Western	N.Central	Average (WI)	NC
50+	4.3%	5.1%	1.3%	1.4%	4.2%	0.4%
40+	9.6%	12.9%	3.6%	4.1%	10.5%	1.5%
30+	20.1%	21.0%	7.9%	11.1%	18.3%	5.1%
20+	43.0%	37.7%	20.0%	29.6%	35.6%	13.9%
10+	76.3%**	69.3%**	53.8%**	72.8%**	68.6%**	82.2%*

Drop off ↑

- “Drop off” from 20 years on up

Chart 3. Comparing Accumulative Percentage between WI and NC



- Difference in “Drop off” curve, due to climate or regional differences?

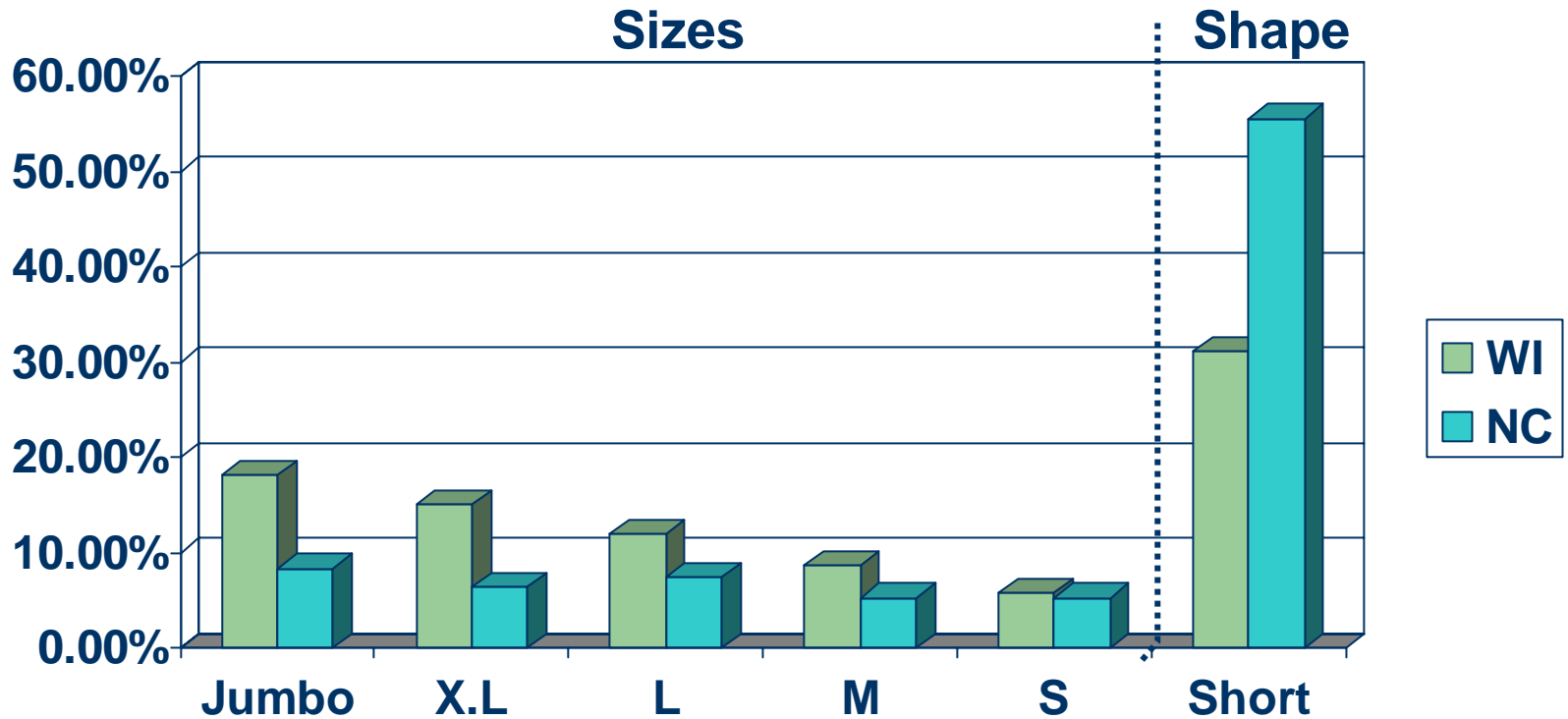
Distribution of Size and Shape by Weights

➤ Long Size	Easter n	S.Western	Western	➤ N.Central	Average (WI)	NC
Jumbo	21.9%	15.6%	9.2%	25.5%	18.1%	8.3%
X. Large	16.4%	13.8%	13.2%	16.5%	15.0%	6.4%
Large	10.3%	14.7%	12.1%	10.7%	12.0%	7.4%
Medium	9.0%	8.1%	9.2%	7.9%	8.6%	5.2%
Small	8.0%	5.3%	4.7%	4.8%	5.7%	5.2%
All Size Short	26.5%	28.0%	39.6%	30.4%	31.1%	55.6%

(Shape)

- By our own proprietary grading standards
- Coached region
- A relative (not absolute) relationship between size and age

Chart 4. Comparing Size and Shape by Weights between WI and NC



The Average Number of Roots Per Pound

Groups	Eastern	S.Western	➤Western	N.Central	Average (WI)	➤NC
Roots/lb	46	49	53	48	49	67

- NC roots are one third smaller, shorter and younger
- Western region are shorter and smaller

Percentage of Diggers “Growing” Own Patch in N. Central Region

Growing own patch	Yes	No
Percentage	85%	15%

Preliminary Conclusions (1):

- This is the first study of its kind in the state of Wisconsin for the past 31 years that I have been in this business.
- Based on the adjusted data, for Wisconsin there is approximately an average 80.5% of fresh wild ginseng roots are 10 years and older, and 19.5% of fresh wild ginseng roots are under 10 years, including those roots with broken necks which is hard to determine age. It is estimated that approximately 10% to 12% are neckless roots. So approximately 10% of roots are under 10 years old.
- The size and age of fresh wild ginseng in Wisconsin is averagely about one third larger than that of NC.

Preliminary Conclusions (2):

- More than half (55.6%) of the fresh wild ginseng in NC is of short shape (specific to this region, not all the states).
- The average roots per pound are 49 for WI and 67 for NC. Again, Wisconsin roots are larger by about one third.
- 85% of diggers of the N. Central Wisconsin are “growing” own patch and coached by dealers to plant seeds and transplanting.
- It is noticed that the western region warrants a special study, the skewed data maybe due to too much wood grown root mixed in or other reasons.
- Rapid “drop-off” seems to occur after 20 years old, especially it is more obvious in NC than that of Wisconsin.***

Preliminary Conclusions (3):

- There are approximately 10% of Neckless fresh wild roots. After they are dried and handled by digger, dealers, and buyers, how much Neckless roots are there at the point of export? It needs further study.
- A closer study is necessary to get an accurate count on the roots that are neckless and those are under 10 years. It can also test the improvement of the future years on the results of this new rule of harvesting only roots that are 10 years or older.
- All states should have a study similar to this to compare all harvesting states in all of these aspects in next 3-5 years.

Preliminary Conclusions (4):

- Local dealers of all harvesting states should be required to “coach” and “educate” diggers to determine ages of roots, planting back seeds, transplanting...etc. to ensure the proper propagation of wild ginseng for the future generation.
- Use the length of the neck to decide whether roots are ready to harvest, say 1” in length. A detail study on this will be carried out this coming fall.
- This is a new idea because counting growth scars takes a lot of time and work, and using “size” is impractical. Probably using the length of the neck seems practical.
- Any comments and questions?

Special Thanks To:

- **Chong Lo, Mai Vang, and Sing Ung___ Grading and recording**
- **Toi Pan___Supervising, grading and recording**
- **Xiaolan Li___Tabulation, inputting, charting, analyzing, etc**
- **Over all supervised by Paul C. Hsu, reporting and analyzing**