



# **The Washington State University Onion Cultivar Trial: Onion Cultivar Performance 2008-2012**

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# WSU Onion Cultivar Trial



- Initiated by Gary Pelter in 1984.
- 45-60 onion cultivars and experimental lines from 8-12 seed companies each year.
- Randomized complete block, 3 replicates.
- Hosted by a different grower-cooperator each year.
- Field Day end of August
- Harvest
  - Yield, Bulb Size Profile, Defects
- Storage Evaluations
  - Shape, Firmness, Scale Retention, Single Centers, Various Storage Rots



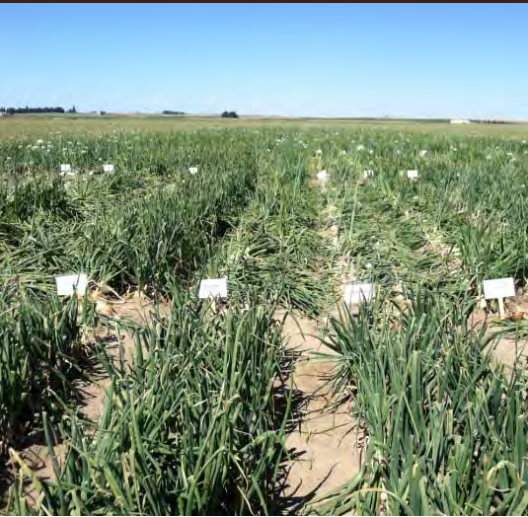


## Some Trial Highlights: 1984-2012



- In 29 years, 259 cultivars and 253 experimental lines have been evaluated.
- Trial Average for Total Marketable Yield:
  - 1984-1992 – 25.3 T/A
  - 1993-2001 – 33.2 T/A
  - 2002-2012 – 43.8 T/A
- Trial Average for % Single-Centers
  - 1984-1992 – 28%
  - 1993-2001 – 40%
  - 2002-2011 – 57%
- Defects (double or split bulbs, split skins, off-color, rotted bulbs) usually only 1-5% of the crop each year.

## TRIAL LOCATIONS: 2008 to 2012



- **2008** – CARR FARMS  
center pivot irrigation, 34" beds
- **2009** – GRIGG FARMS  
center pivot irrigation, 34" beds
- **2010** – WEYNS FARMS  
drip irrigation, 68" beds
- **2011** – SKONE & CONNORS PRODUCE  
drip irrigation, 68" beds
- **2012** – L & L AG PRODUCTION  
drip irrigation, 80" beds

## 5-YEAR TRIAL ENTRIES (2008 to 2012)



1. **Arcero** – Nunhems, USA
2. **Calibra** – Bejo Seeds
3. **Crockett** – Bejo Seeds
4. **Delgado** – Bejo Seeds
5. **Granero** – Nunhems, USA
6. **Gunnison** – Bejo Seeds
7. **Joaquin** – Nunhems, USA
8. **Legend** – Bejo Seeds
9. **Milestone** – American Takii
10. **Montero** – Nunhems, USA
11. **Ranchero** – Nunhems, USA
12. **Rainier (W)** – Seminis Vegetable Seeds
13. **Redwing (R)** – Bejo Seeds
14. **Ruby Ring (R)** – American Takii
15. **Talon** – Bejo Seeds
16. **Tamara** – Bejo Seeds
17. **Vaquero** – Nunhems, USA

## 4-YEAR TRIAL ENTRIES



1. **Bello Blanco (W)** – Sakata Seeds (2009-2012)
2. **Centerstone** – American Takii (2008, 2010-2012)
3. **NN-65** – Nippon Norin (2009-2012)
4. **Ovation** – Sakata Seed (2009-2012)
5. **Sedona** – Bejo Seeds (2008-2011)
6. **Spanish Medallion** – Sakata Seed (2009-2012)
7. **Swale** – Seminis Vegetable Seeds (2009-2012)
8. **White Cloud (W)** – Crookham Company (2008-2011)

## 3-YEAR TRIAL ENTRIES



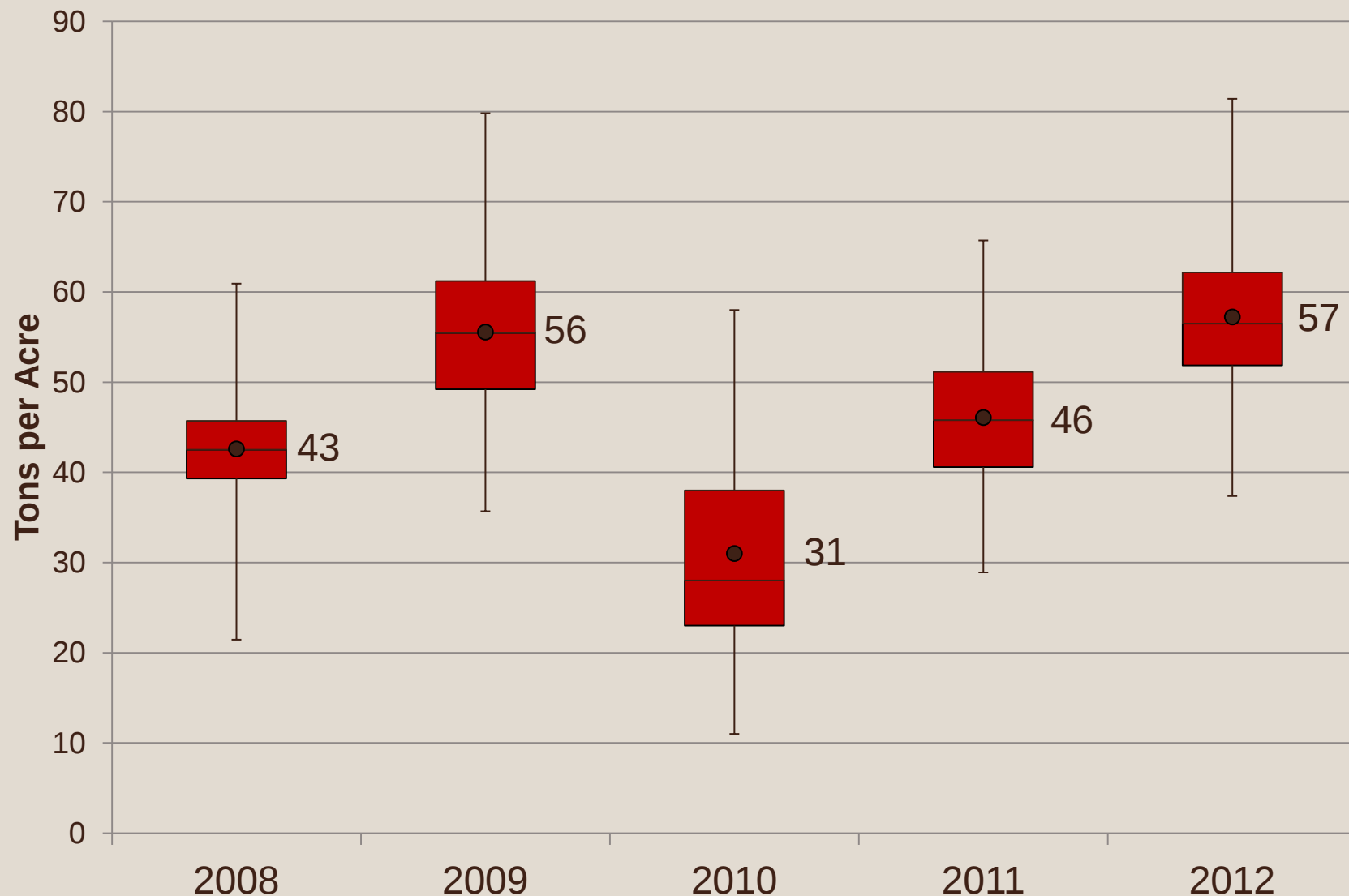
1. **Abilene** – Seminis Vegetable Seeds (2008-2010)
2. **Advantage** – Crookham Company (2010-2012)
3. **Affirmed** – Seminis Vegetable Seeds (2008, 2011-2012)
4. **Barbaro** – Seminis Vegetable Seeds (2010-2012)
5. **Belmar** – Seminis Vegetable Seeds (2010-2012)
6. **Elbrus** – Seminis Vegetable Seeds (2010-2012)
7. **Esteem** – Crookham Company (2010-2012)
8. **Marengo (R)** – Nunhems, USA (2010-2012)
9. **Marquette** – Seminis Vegetable Seeds (2008-2010)
10. **Orizaba (W)** – Seminis Vegetable Seeds (2008, 2010-2011)
11. **Pulsar** – Nunhems, USA (2008-2010)
12. **Salsa (R)** – Nunhems, USA (2008-2010)
13. **Sabroso** – Nunhems, USA (2008-2010)

# YIELD



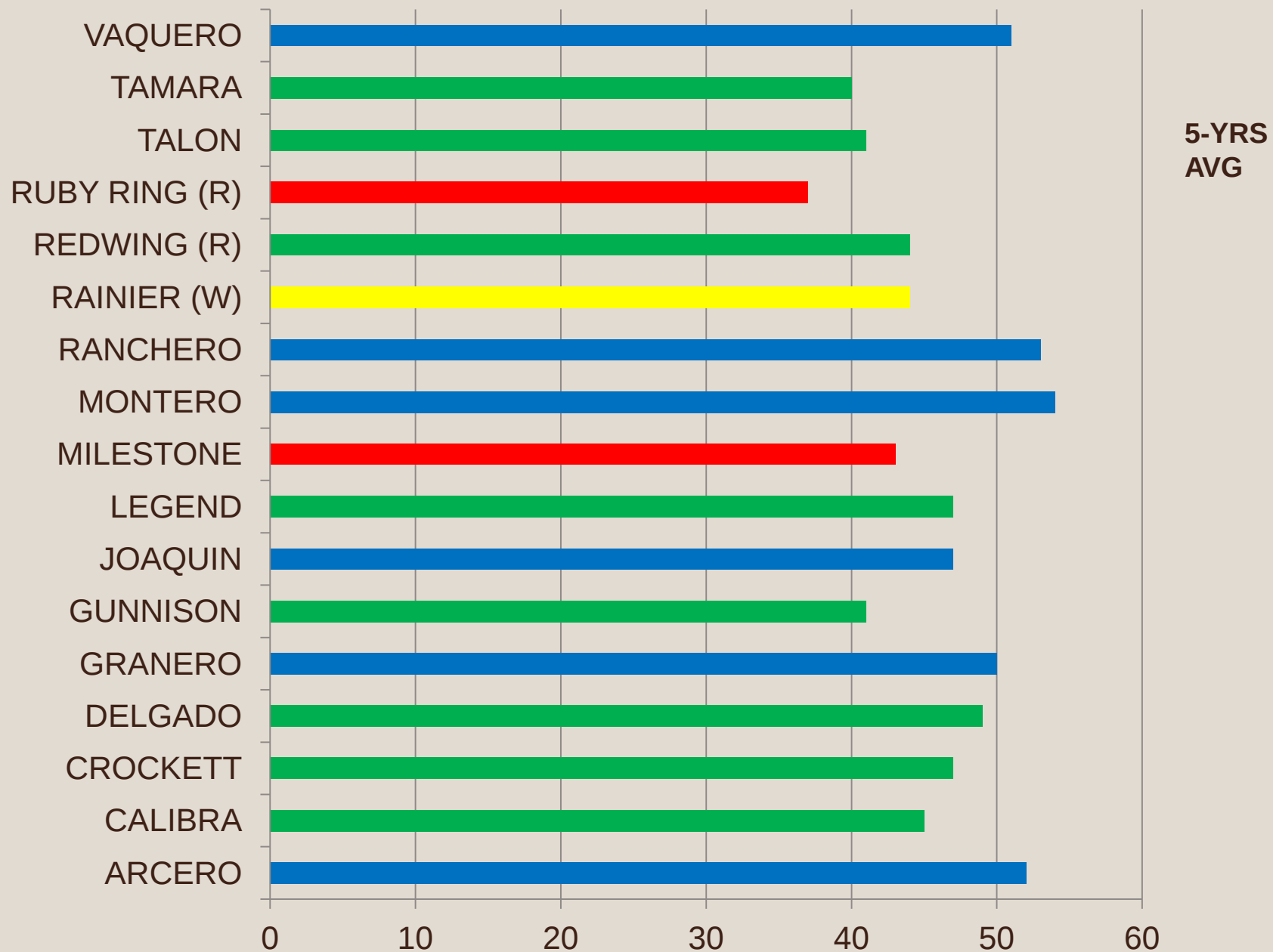
G. Q. Pelter, 2004

# TOTAL USABLE YIELD: Trial Means 2008-2012



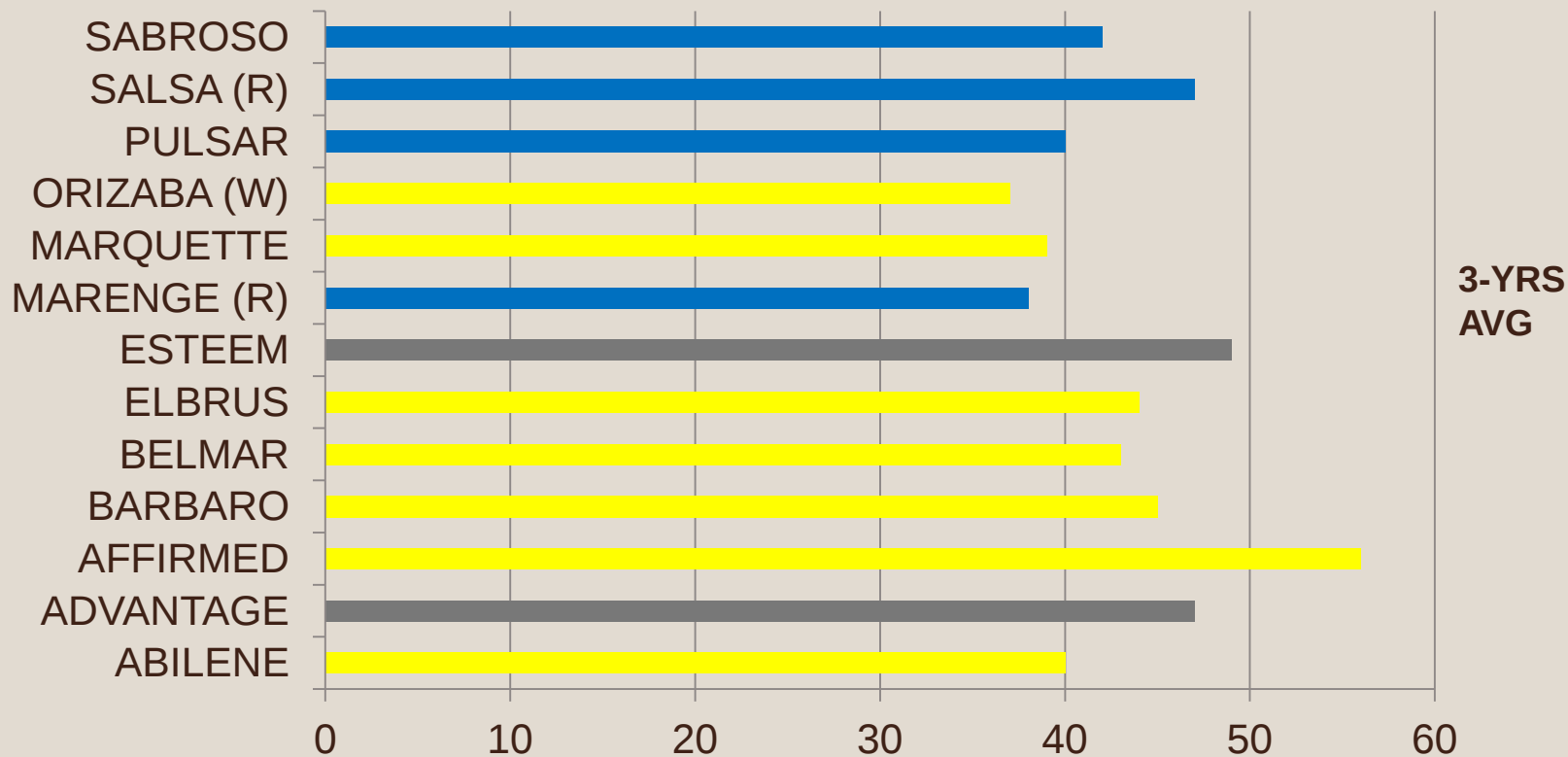
## TOTAL USABLE YIELD – TOP TEN

|                     |          |              |
|---------------------|----------|--------------|
| • MONTERO           | 54.2 T/A | 5-YR AVERAGE |
| • RANCHERO          | 52.6 T/A | 5-YR AVERAGE |
| • ARCERO            | 52.4 T/A | 5-YR AVERAGE |
| • VAQUERO           | 50.8 T/A | 5-YR AVERAGE |
| • GRANERO           | 49.8 T/A | 5-YR AVERAGE |
| • DELGADO           | 49.1 T/A | 5-YR AVERAGE |
| • OVATION           | 57.6 T/A | 4-YR AVERAGE |
| • SPANISH MEDALLION | 53.2 T/A | 4-YR AVERAGE |
| • WHITE CLOUD (W)   | 46.0 T/A | 4-YR AVERAGE |
| • *AFFIRMED         | 55.8 T/A | 3-YR AVERAGE |
| • ESTEEM            | 49.0 T/A | 3-YR AVERAGE |
| • SALSA (R)         | 47.1 T/A | 3-YR AVERAGE |



Color-coded by seed company.

Total Usable Yield (T/A)



Color-coded by seed company.

Total Usable Yield (T/A)

# SIZE DISTRIBUTION

**COLOSSAL ( $>4''$ )**

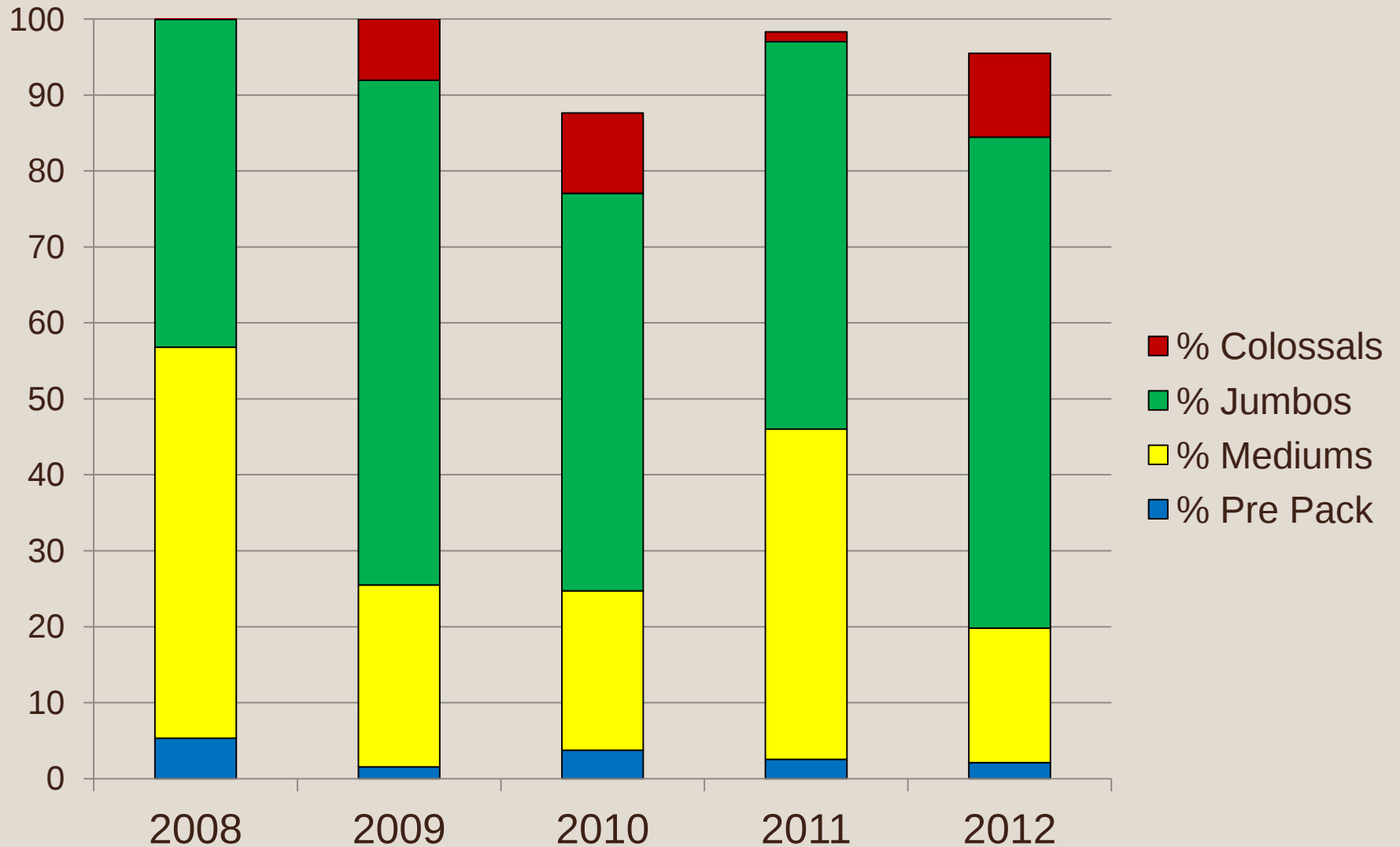
**JUMBO ( $3'' - 4''$ )**

**MEDIUM ( $2.25'' - 3''$ )**

**PRE-PACK ( $<2.25''$ )**



# ONION SIZE DISTRIBUTION: Trial Means 2008-2012



## **% COLOSSAL BULBS – TOP TWELVE**

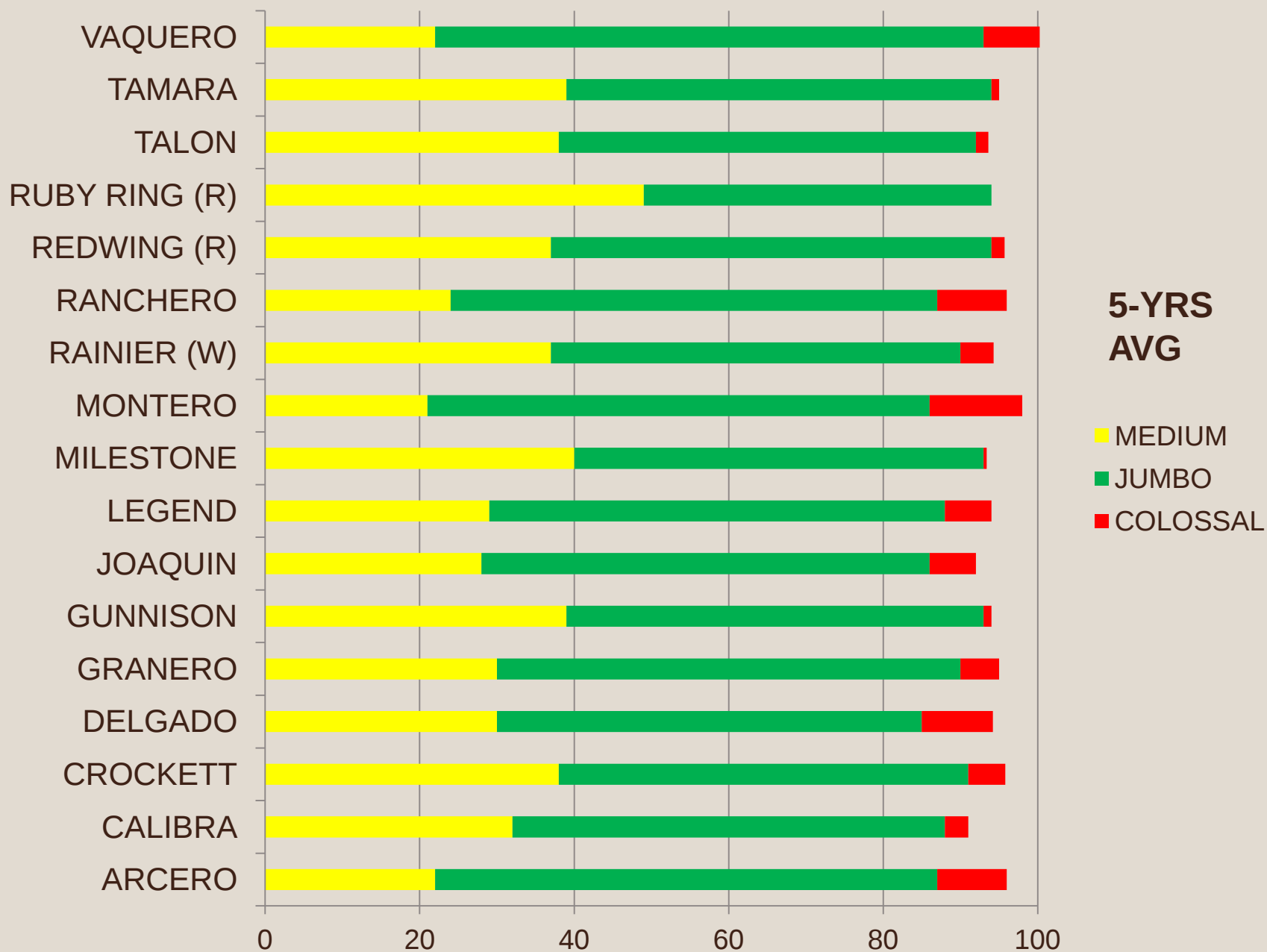
|                      |       |              |
|----------------------|-------|--------------|
| • MONTERO            | 11.6% | 5-YR AVERAGE |
| • VAQUERO            | 10.6% | 5-YR AVERAGE |
| • DELGADO            | 9.2%  | 5-YR AVERAGE |
| • RANCHERO           | 9.0%  | 5-YR AVERAGE |
| • *OVATION           | 21.8% | 4-YR AVERAGE |
| • *SPANISH MEDALLION | 24.2% | 4-YR AVERAGE |
| • SWALE              | 9.8%  | 4-YR AVERAGE |
| • WHITE CLOUD (W)    | 9.4%  | 4-YR AVERAGE |
| • *BARBARO           | 16.4% | 3-YR AVERAGE |
| • BELLO BLANCO (W)   | 12.9% | 3-YR AVERAGE |
| • ADVANTAGE          | 12.7% | 3-YR AVERAGE |
| • AFFIRMED           | 12.0% | 3-YR AVERAGE |

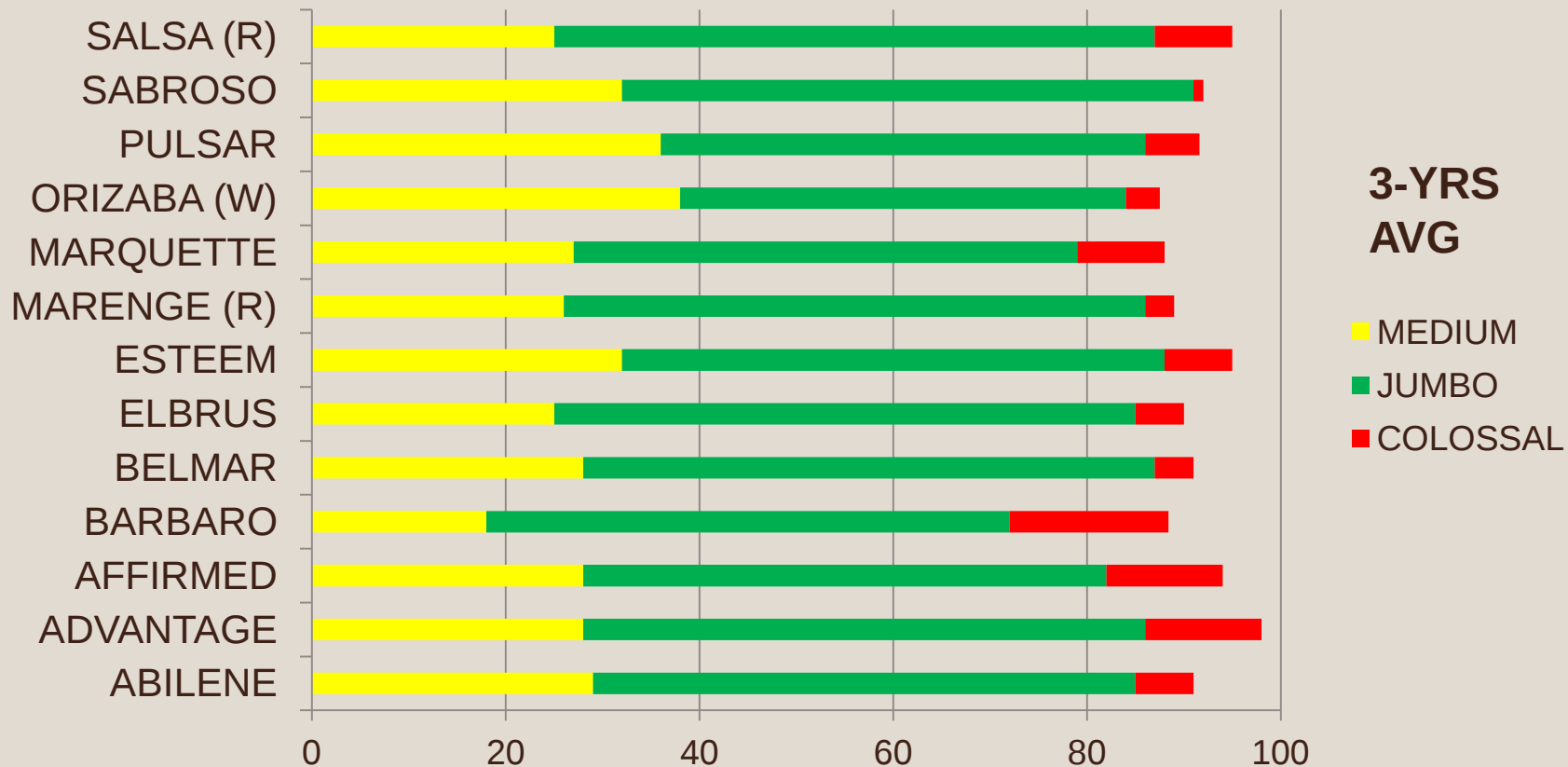
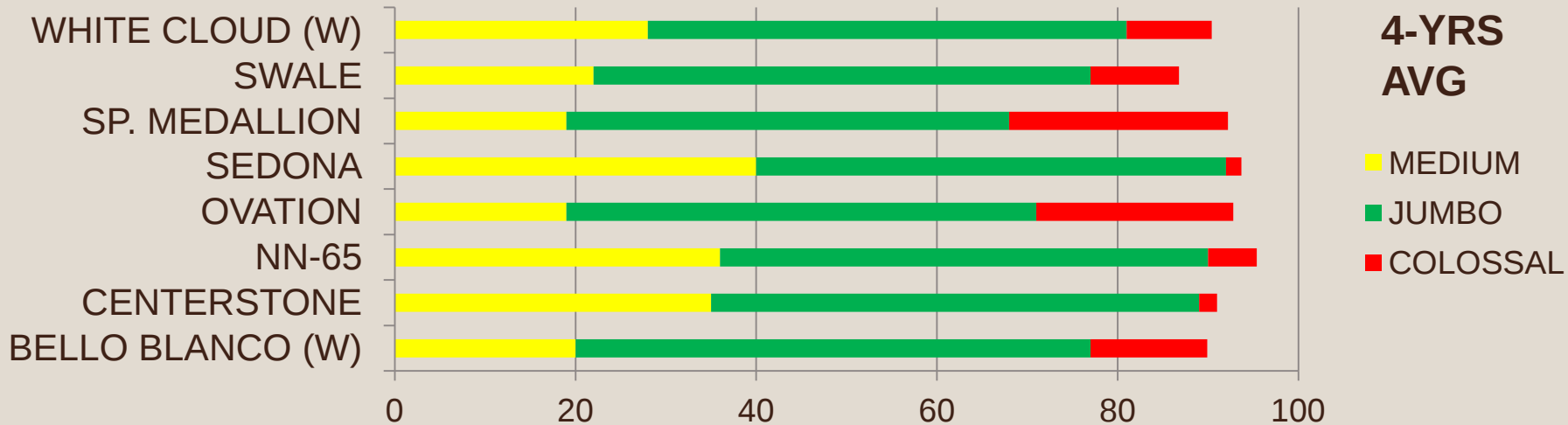
## **% JUMBO BULBS – TOP TWELVE**

|             |       |              |
|-------------|-------|--------------|
| • MONTERO   | 65.3% | 5-YR AVERAGE |
| • ARCERO    | 65.0% | 5-YR AVERAGE |
| • RANCHERO  | 63.0% | 5-YR AVERAGE |
| • VAQUERO   | 60.6% | 5-YR AVERAGE |
| • GRANERO   | 60.1% | 5-YR AVERAGE |
| • LEGEND    | 58.7% | 5-YR AVERAGE |
| • JOAQUIN   | 57.9% | 5-YR AVERAGE |
|             |       |              |
| • SALSA (R) | 61.6% | 3-YR AVERAGE |
| • ELBRUS    | 59.9% | 3-YR AVERAGE |
| • BELMAR    | 59.3% | 3-YR AVERAGE |
| • SABROSO   | 58.5% | 3-YR AVERAGE |
| • ADVANTAGE | 58.3% | 3-YR AVERAGE |

## **% MEDIUM BULBS – TOP TWELVE**

|                 |       |              |
|-----------------|-------|--------------|
| • RUBY RING (R) | 48.5% | 5-YR AVERAGE |
| • MILESTONE     | 40.2% | 5-YR AVERAGE |
| • TAMARA        | 39.1% | 5-YR AVERAGE |
| • GUNNISON      | 39.1% | 5-YR AVERAGE |
| • CROCKETT      | 38.3% | 5-YR AVERAGE |
| • TALON         | 37.5% | 5-YR AVERAGE |
| • REDWING (R)   | 36.8% | 5-YR AVERAGE |
| • RAINIER (W)   | 36.6% | 5-YR AVERAGE |
| • SEDONA        | 40.4% | 4-YR AVERAGE |
| • NN-65         | 36.1% | 4-YR AVERAGE |
| • ORIZABA (W)   | 38.4% | 3-YR AVERAGE |
| • PULSAR        | 36.4% | 3-YR AVERAGE |







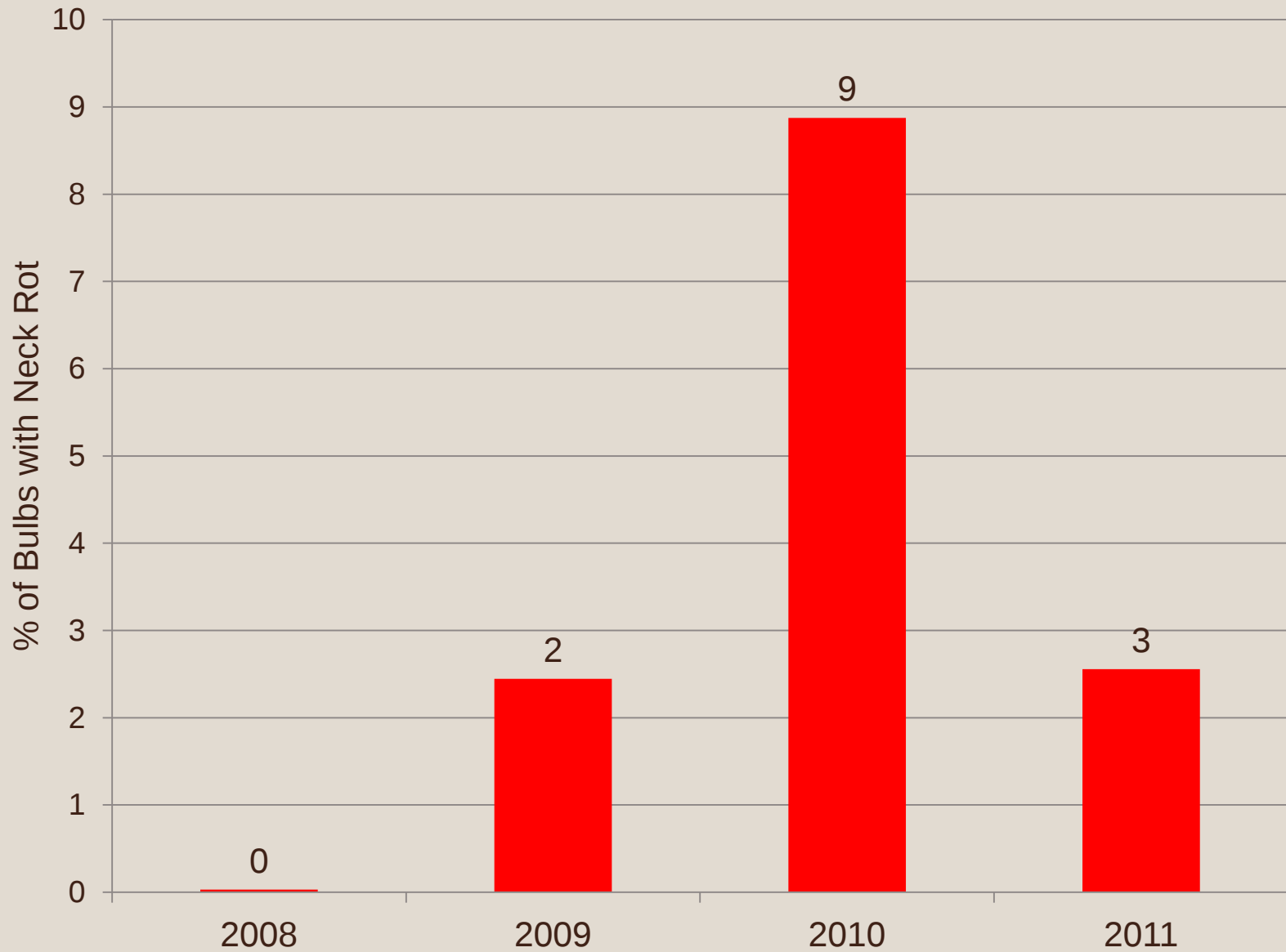
# STORAGE EVALUATIONS

# NECK ROT

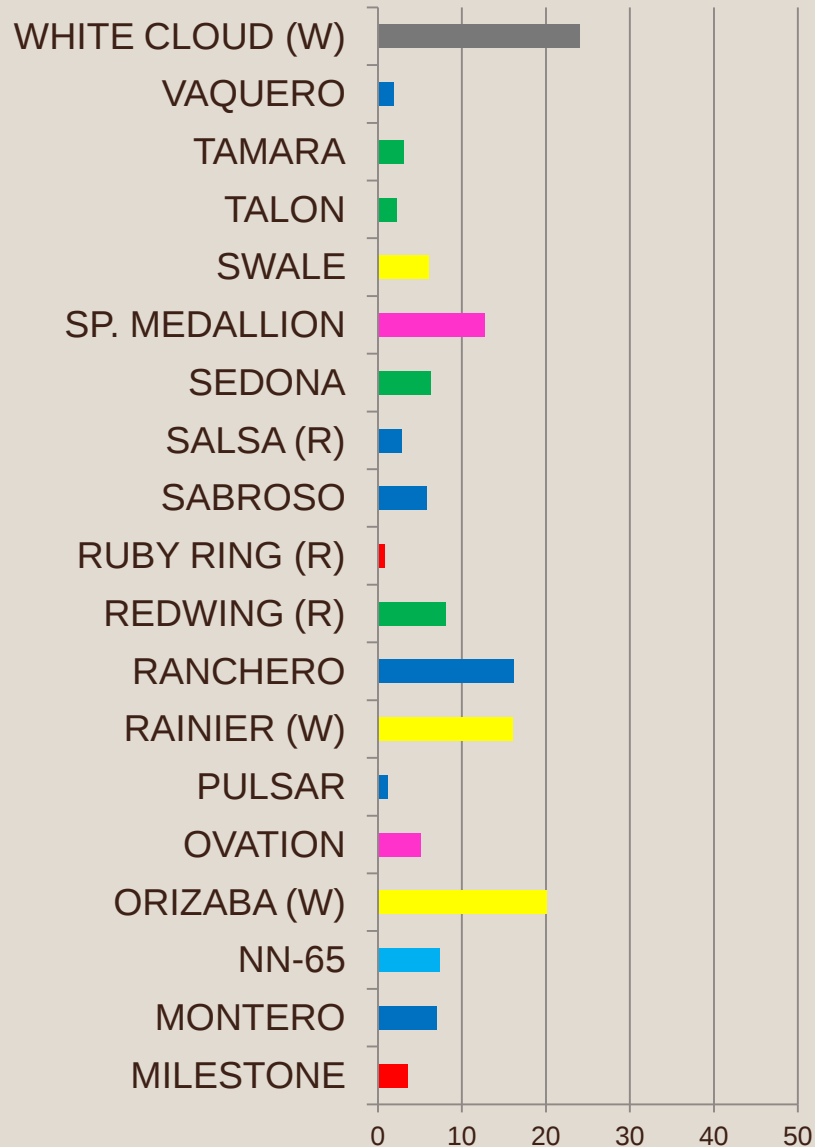
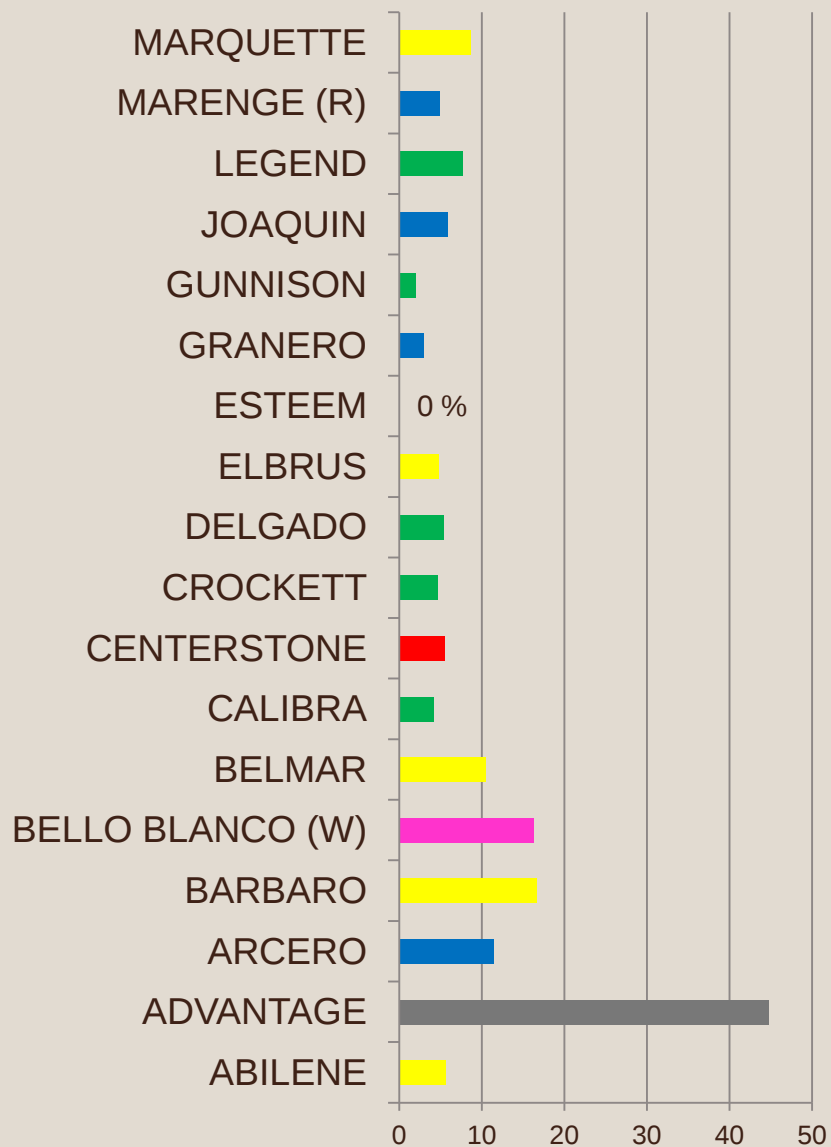


Photos by Lindsey du Toit

## % NECK ROT: 2008-2011



## % Neck Rot – 2010 Storage Evaluation



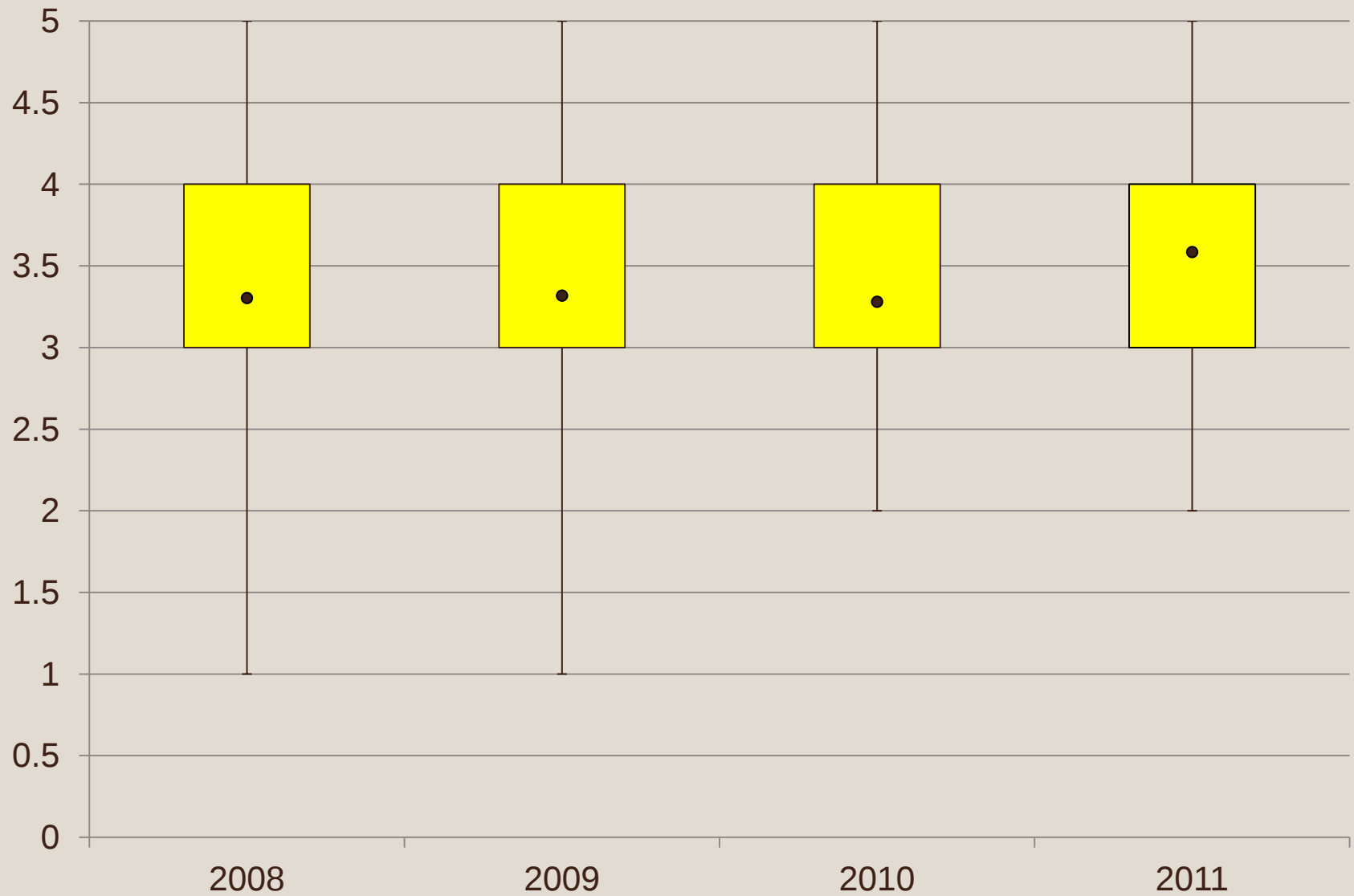
Color-coded by seed company.



# FIRMNESS RATING

G. Q. Pelter, 2004

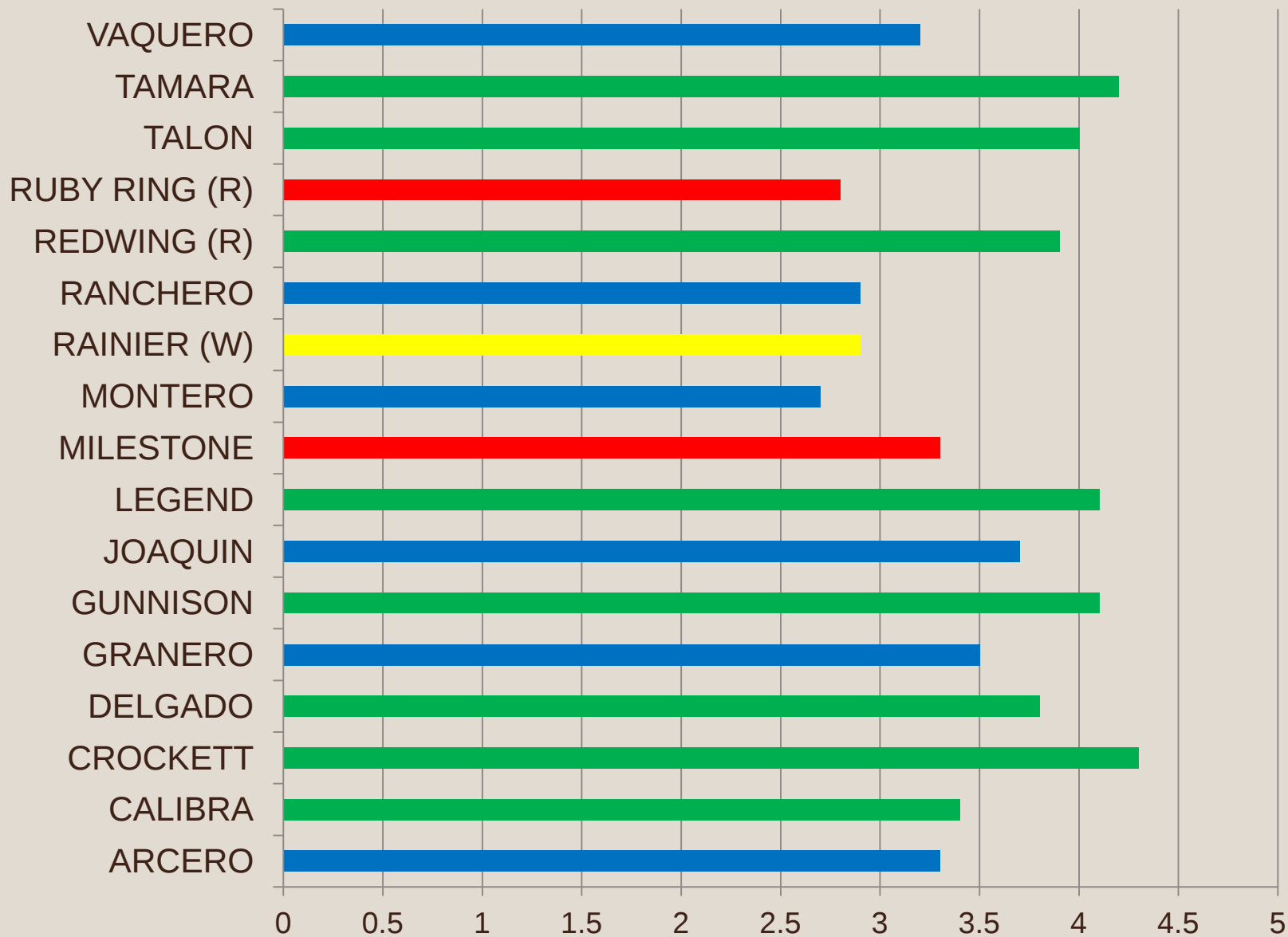
## FIRMNESS RATING: 2008-2011



## BEST FIRMNESS RATINGS

|            |     |              |
|------------|-----|--------------|
| • CROCKETT | 4.3 | 4-YR AVERAGE |
| • TAMARA   | 4.2 | 4-YR AVERAGE |
| • GUNNISON | 4.1 | 4-YR AVERAGE |
| • LEGEND   | 4.1 | 4-YR AVERAGE |
| • TALON    | 4.0 | 4-YR AVERAGE |
|            |     |              |
| • PULSAR   | 4.3 | 2-YR AVERAGE |
| • SABROSO  | 4.0 | 2-YR AVERAGE |

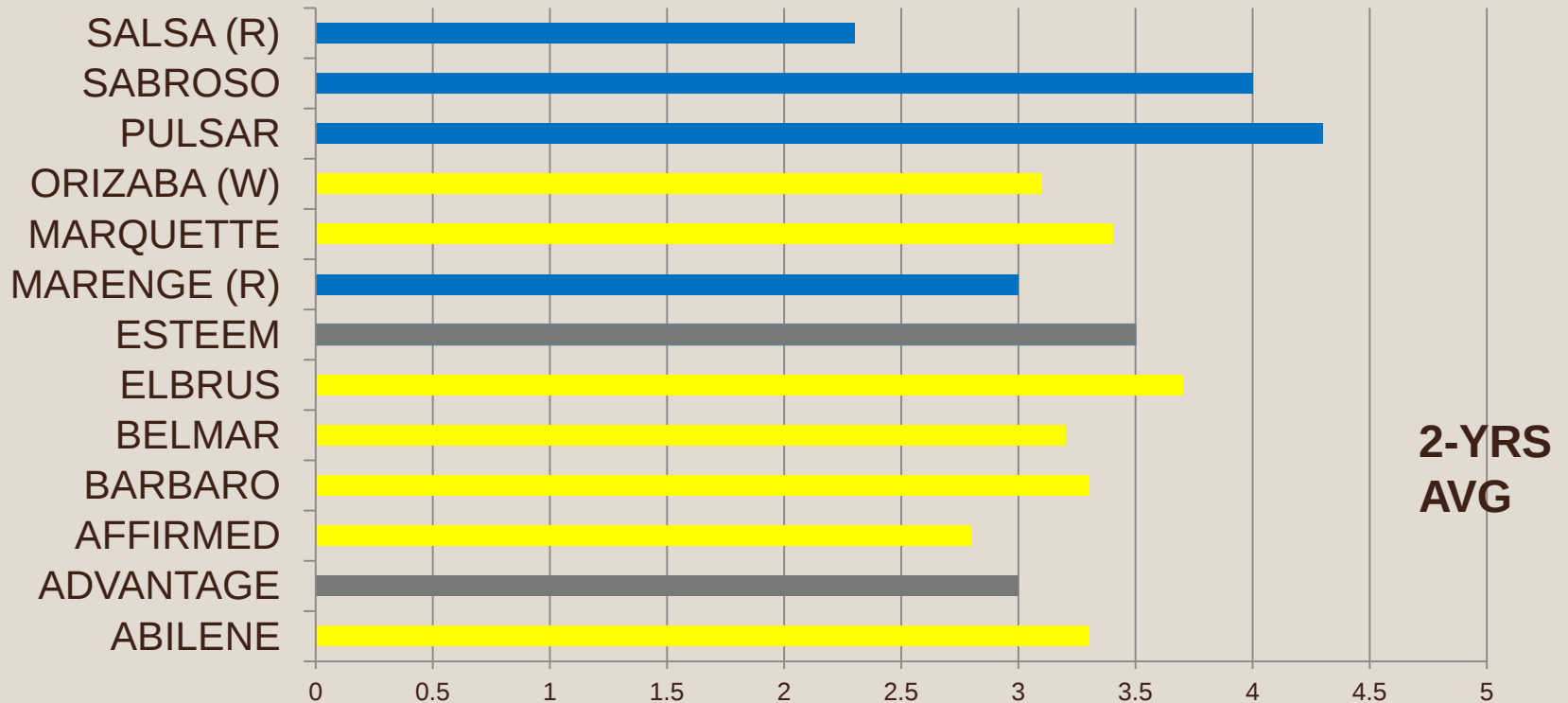
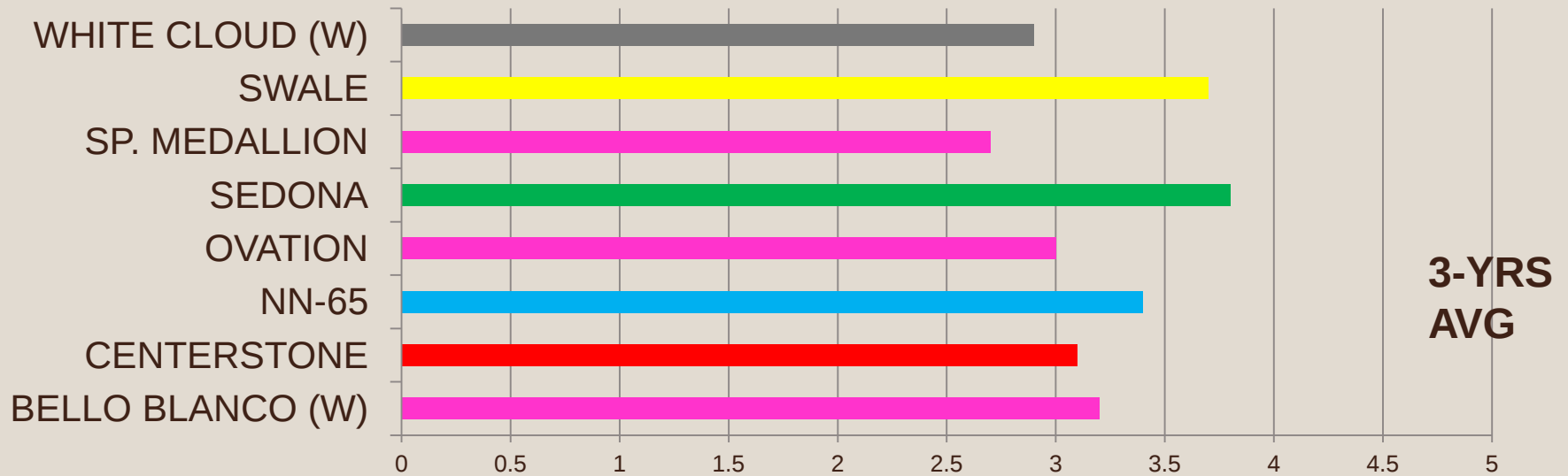




Color-coded by seed company.

FIRMNESS RATING (1-5)

**4-YRS AVG**

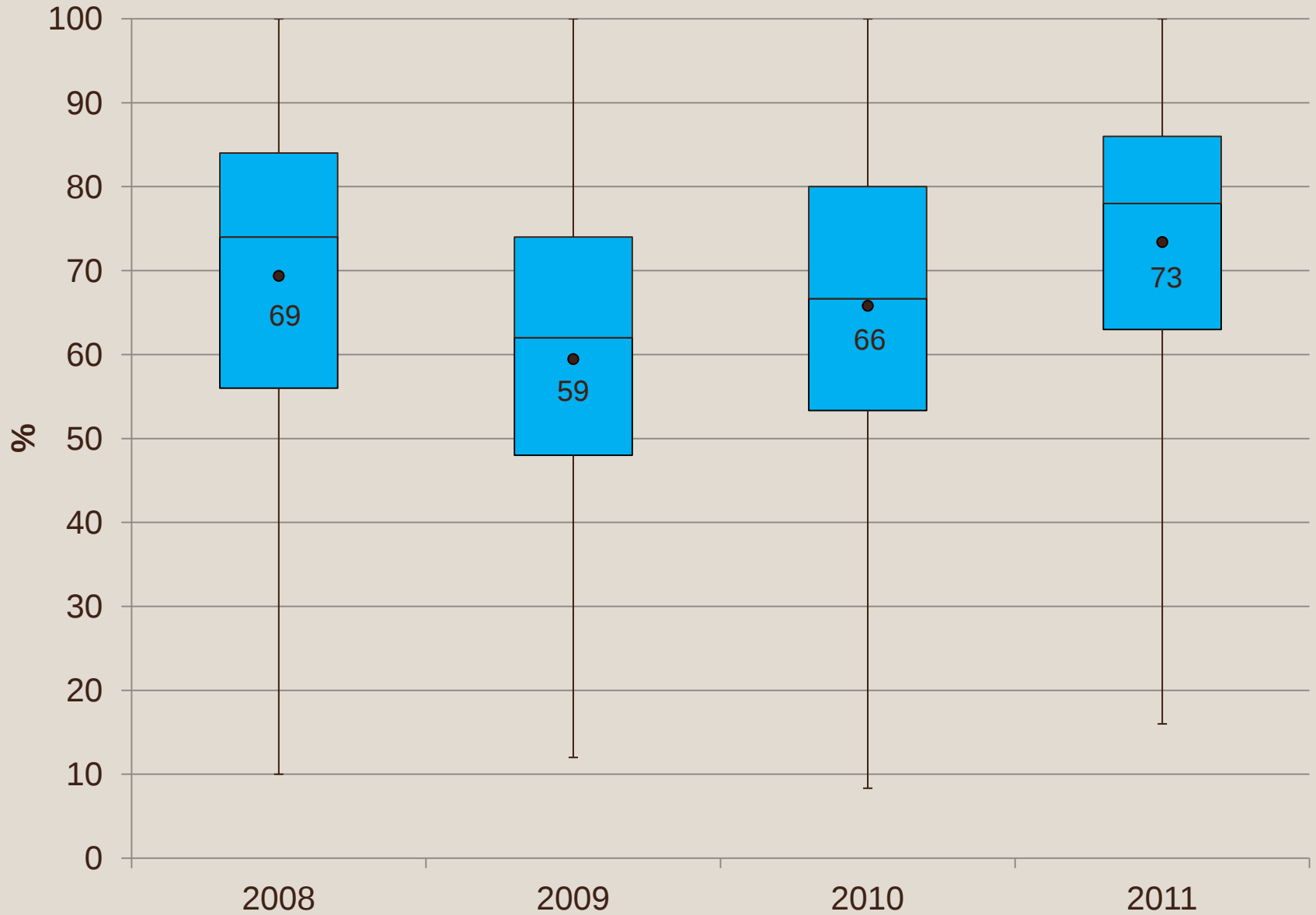


Color-coded by seed company.

# SINGLE CENTERS

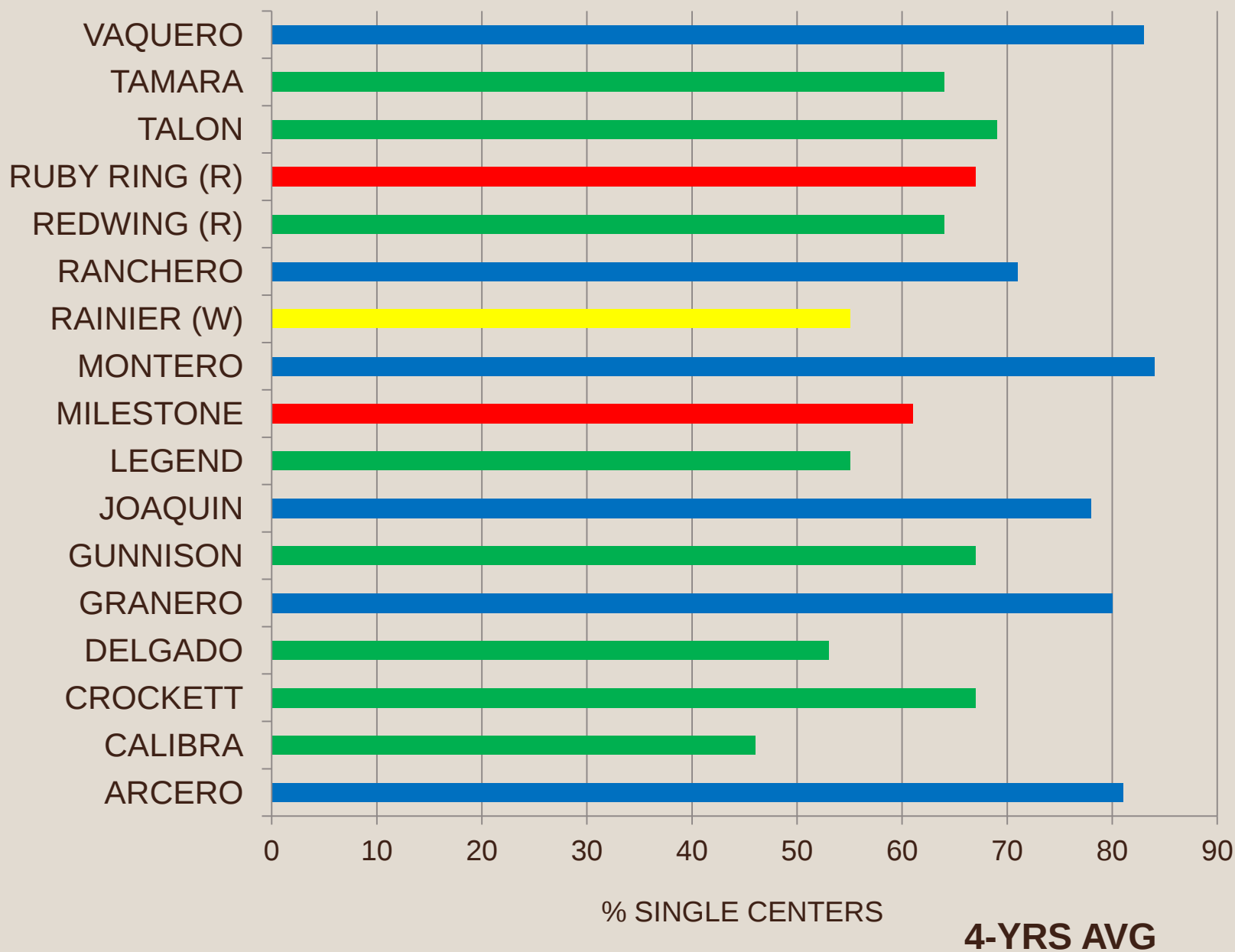


## % SINGLE CENTERS: 2008-2011

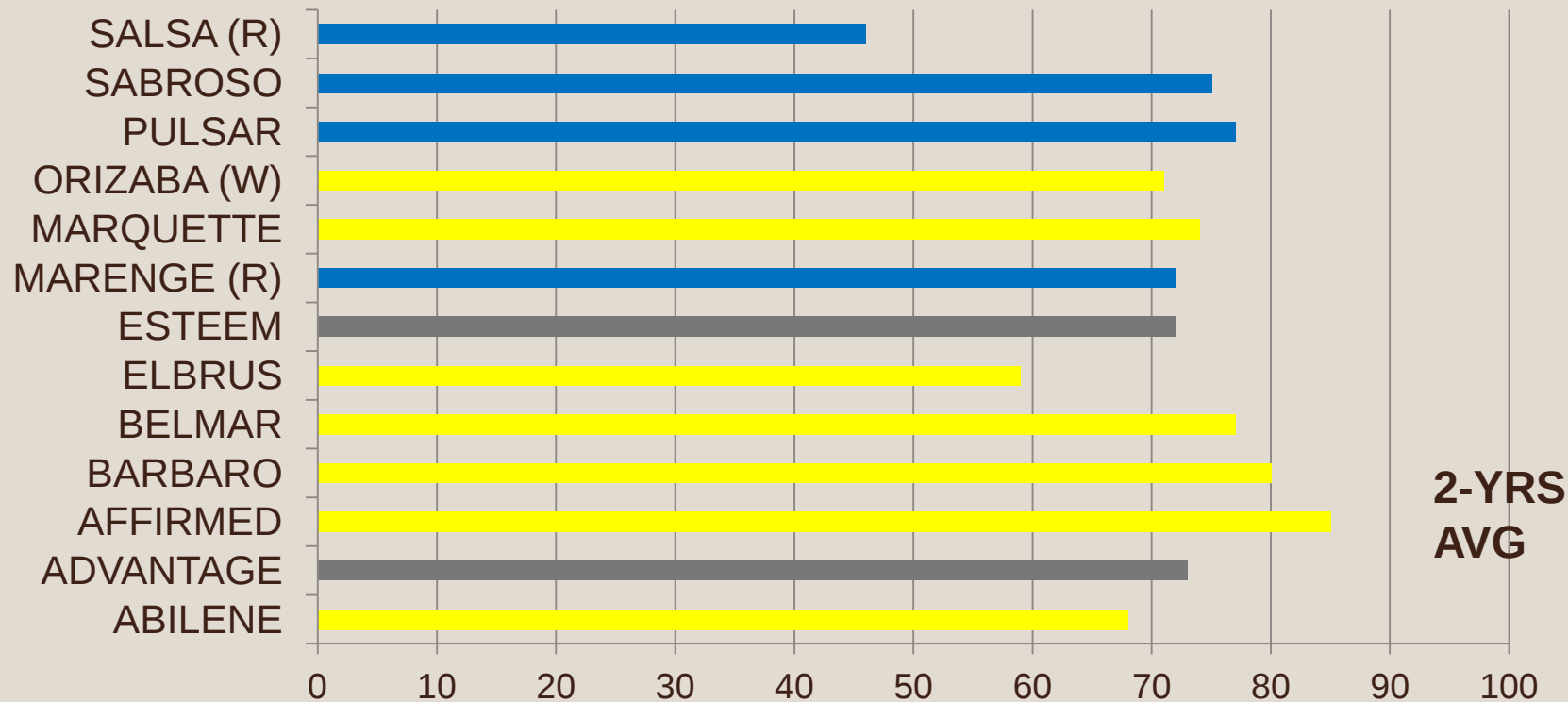


## SINGLE CENTERS %

|            |     |              |
|------------|-----|--------------|
| • MONTERO  | 84% | 4-YR AVERAGE |
| • VAQUERO  | 83% | 4-YR AVERAGE |
| • ARCERO   | 81% | 4-YR AVERAGE |
| • GRANERO  | 80% | 4-YR AVERAGE |
| • JOAQUIN  | 77% | 4-YR AVERAGE |
| • SWALE    | 78% | 3-YR AVERAGE |
| • NN-65    | 78% | 3-YR AVERAGE |
| • PULSAR   | 76% | 3-YR AVERAGE |
| • AFFIRMED | 85% | 2-YR AVERAGE |
| • BARBARO  | 80% | 2-YR AVERAGE |
| • BELMAR   | 77% | 2-YR AVERAGE |



Color-coded by seed company.



Color-coded by seed company.

## WASHINGTON STATE UNIVERSITY EXTENSION



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*Thanks*