

**Report to the Oregon Processed Vegetable Commission
1993-1994**

1. Title: Table Beet Variety Evaluation
2. Project Leaders: N. S. Mansour, Horticulture
J. R. Baggett, Horticulture
P. Koepsell, Botany and Plant Pathology

Cooperators: Agripac
Norpac
3. Project Status: Terminating June 30, 1994
4. Project Funding: \$1,500 wages
\$1,500 materials and supplies
5. Objectives: Oregon processors expressed a number of concerns about table beets:
 - 1) Markets for Oregon beets are declining.
 - 2) Premiums per case for Oregon table beets over beets produced elsewhere in the United States are also declining.
 - 3) Table beets are limited in their use to being canned and cannot be blended with other vegetables due to bleeding of their red color.
 - 4) Production is hampered by several diseases, notably downy and powdery mildews and rust.

Based on these concerns, the Oregon Processed Vegetable Commission funded a proposal to address some of these problems. The proposal had the following objectives:

- 1) Screen commercial beets and the USDA Plant Introduction collection for adaptability to Oregon conditions and the possibility of minimal bleeding of the red color pigment.
 - 2) Observe table beet lines for possible resistance to the above-mentioned diseases.
 - 3) Provide samples for processor testing by Agripac and Norpac.
6. Report of Progress:
- In addressing the above objectives, the Plant Introduction Station at Ames, Iowa was contacted for information and samples of their red beet collection. After screening several hundred *Beta vulgaris* accessions described in the Plant Introduction database, 57 were chosen for field evaluation. These included all round, or elongated, red table beets available in the collection from around the world.

Thirty-five seed companies, both U.S. and foreign, were contacted for commercial lines of table beets that they might have available for testing. Fifty-six cultivars were submitted and were included in the observation trials.

Plots of all 110 cultivars and accessions were planted on May 11, 1993, and all named commercial varieties were again planted on June 23 at the Vegetable Crops Research Farm in Corvallis. Plots were single rows 20 feet long in rows three feet apart for observation and sample collection. A band application of 450 lbs/A of 12-29-10-4 granular fertilizer was made before planting. No additional fertilizer was applied. Prior to planting, the seed was counted to give approximately 25 plants per lineal foot. Irrigation was applied as necessary for proper plant growth. Weeds were controlled by applications of RoNeet and Antor.

Notes were taken on emergence and vigor on May 19 and June 4. Because of the wet spring, the plots were evaluated for stress based on leaf redness on June 14 and July 29. Observations on various foliar fungal pathogens were made in July and August, evaluating the beets for leafspot and looking for powdery or downy mildew symptoms, and also for foliar symptoms of viruses. At harvest, on August 3, the first planting was evaluated for top and root vigor, approximate days to harvest, root smoothness, interior root color, root shape, and root uniformity. Several remarks were made throughout the season, particularly regarding bolting and zoning of the root. Data is expressed in Table 1.

Field representatives of Agripac and Norpac evaluated the plots at harvest time and selected a number of the better varieties for processing. The lines selected were:

| <u>Variety</u> | <u>Company</u> | <u>Plot #</u> |
|----------------------------|--------------------------|---------------|
| Action | Bejo Seed Co. | 21 |
| Baby Spirel | Nichols Seed Co. | 13 |
| CXA 2517 | Alf Christensen Seed Co. | 103 |
| CXA 6023 | Alf Christensen Seed Co. | 100 |
| CXA 9014 | Alf Christensen Seed Co. | 101 |
| CXA 9026 | Alf Christensen Seed Co. | 102 |
| Cylindra | Alf Christensen Seed Co. | 108 |
| Cyndor 1/2 Long | Alf Christensen Seed Co. | 110 |
| Detroit Dark Red Short Top | Peto Seed Co. | 10 |
| EXP 6812 | Bakker Seed Co. | 98 |
| Monogram | A. L. Tozer Seed Co. | 18 |
| Pacemaker III | Alf Christensen Seed Co. | 109 |
| Red Ace | Alf Christensen Seed Co. | 105 |
| Red Ace | Johnny Seed Co. | 15 |
| Ruby Queen | Northrup Seed Co. | 5 |

The second planting was evaluated on October 5, 1993. These were evaluated for top vigor, crown size, root color, root smoothness, and days to maturity, and given an overall score (Table 2). Field representatives of the processing companies again evaluated the plots at harvest time to see whether observations made at the first planting were confirmed by

performance of the varieties in the second planting. Samples of the following varieties were collected for processing:

| <u>Variety</u> | <u>Company</u> | <u>Plot #</u> |
|------------------------------|------------------------|---------------|
| Detroit-Elsoms Crimson Globe | Elsoms Seed Co. | 229 |
| EXP 6812 | Bakker Seed Co. | 239B |
| Ruby Queen | Northrup King Seed Co. | 215 |

Based on field observations, all beets exhibited normal bleeding of the red pigment.

7. Summary:

Two plantings of table beets were made to evaluate varieties for adaptability to Oregon conditions. Of the 110 cultivars that were planted and evaluated by OSU and by field representatives from Agripac and Norpac, 15 cultivars from the first planting and three cultivars from the second planting were selected for processing.

8. Signatures:

Project Leader: Redacted for Privacy

Project Leader: Redacted for Privacy

Project Leader: Redacted for Privacy

Department Head: Redacted for Privacy

Department Head: Redacted for Privacy

Table 1. Table Beet Variety Trial - First Planting

| Name | Seed Co.* | Emergence | | Vigor June 4 1-5** | Leaf Redness 1 = Green 5 = Red June 14 | Disease Rating, July 29 1 = Minimal, 5 = Severe | | | Tops Vigor** | Approx. Days to Bulbing Vigor** | Root Harvest*** | Interior Smoothness** | Root Color** | Root Root Shape | Uniformity** | Remarks | Overall Score** |
|--------------------------|-----------|-----------------|-----------------|-----------------------|---|--|----------|-------|--------------|---------------------------------|-----------------|-----------------------|--------------|-----------------|--------------|---------------|-----------------|
| | | May 19 1-5** | June 4 1-5** | | | Leaf Redness | Leafspot | Virus | | | | | | | | | |
| Action | 5 | 4 | 3 | 3 | 3 | 1 | 2 | yes | 4 | 4 | 92 | 4 | 4 | round | 4 | refined crown | 4 |
| Asgrow Wonder | 2 | 5 | 4 | 4 | 4 | 3 | 3 | yes | 5 | 3 | 102 | 3 | 1 | heart | 2 | slight zoning | 1 |
| Avenger | 9 | 3 | 3 | 3 | 3 | 1 | 2 | yes | 5 | 3 | 92 | 3 | 4 | heart | 2 | | 2 |
| Baby Spirel | 12 | 3 | 2 | 4 | 4 | 4 | 4 | yes | 4 | 4 | 92 | 4 | 3 | heart | 3 | slight zoning | 3 |
| Big Red | 1 | 5 | 5 | 3 | 3 | 2 | 3 | | 3 | 3 | 99 | 3 | 4 | round | 4 | | 3 |
| Boldet | 3 | 4 | 3 | 4 | 4 | 3 | 3 | yes | 4 | 4 | 97 | 3 | 2 | heart | 3 | zoning | 2 |
| Bolivar | 13 | 3 | 3 | 4 | 4 | 3 | 2 | | 2 | 3 | 106 | 3 | 4 | heart | 3 | | 3 |
| Boston | 3 | 2 | 2 | 4 | 4 | 1 | 3 | | 2 | 4 | 92 | 4 | 3 | heart | 4 | zoning | 3 |
| Braco | 18 | 5 | 5 | 4 | 4 | 3 | 3 | | 4 | 2 | 112 | 3 | 3 | round | 3 | | 3 |
| Chioggia | 10 | 2 | 3 | 1 | 1 | 1 | 2 | yes | 4 | 4 | 92 | 1 | 1 | flat | 3 | severe zoning | 1 |
| Crimson Tide | 15 | 4 | 2 | 5 | 5 | 3 | 2 | | 2 | 2 | 102 | 2 | 3 | heart | 2 | slight zoning | 2 |
| CXA 6024 | 1 | 3 | 4 | 4 | 4 | 2 | 2 | | 5 | 3 | 100 | 3 | 4 | round | 3 | | 3 |
| CXA 2520 | 1 | 3 | 2 | 4 | 4 | 3 | 3 | yes | 5 | 4 | 92 | 3 | 3 | heart | 2 | | 3 |
| CXA 9026 | 1 | 5 | 5 | 4 | 4 | 4 | 3 | | 5 | 5 | 112 | 4 | 4 | semicylin | 3 | | 3 |
| CXA 2517 | 1 | 5 | 5 | 3 | 3 | 1 | 1 | yes | 4 | 3 | 106 | 4 | 3 | round | 3 | | 4 |
| CXA 9014 | 1 | 4 | 5 | 3 | 3 | 2 | 3 | | 5 | 3 | 99 | 4 | 3 | round | 3 | | 4 |
| CXA 6023 | 1 | 3 | 5 | 3 | 3 | 1 | 1 | | 5 | 4 | 99 | 4 | 4 | round | 4 | | 4 |
| Cylindra | 1 | 5 | 4 | 4 | 4 | 3 | 2 | yes | 5 | 5 | 106 | 4 | 4 | cylinder | 4 | | 4 |
| Cyndor | 1 | 5 | 3 | 5 | 4 | 4 | 2 | yes | 3 | 3 | 110 | 4 | 3 | cylinder | 4 | | 4 |
| Darko | 18 | 3 | 4 | 4 | 4 | 1 | 2 | | 4 | 3 | 102 | 3 | 4 | round | 4 | | 4 |
| Detroit Dark Red S.T. | 9 | 3 | 6 | 5 | 5 | 2 | 1 | yes | 4 | 4 | 99 | 4 | 3 | heart | 3 | slight zoning | 3 |
| Detroit S.L. | 6 | 5 | 3 | 4 | 4 | 1 | 2 | | 4 | 3 | 106 | 2 | 2 | round | 2 | | 2 |
| Detroit Crimson Globe | 7 | 4 | 4 | 4 | 4 | 1 | 1 | yes | 4 | 4 | 92 | 3 | 4 | round | 4 | healthy tops | 4 |
| Detroit Lorette | 17 | 5 | 3 | 4 | 4 | 2 | 2 | | 4 | 2 | 109 | 4 | 5 | heart | 3 | | 3 |
| Detroit Amelioree (Imp.) | 17 | 4 | 3 | 4 | 4 | 1 | 2 | | 5 | 5 | 92 | 3 | 2 | heart | 2 | | 2 |
| Detroit Dark Red St. | 15 | 3 | 3 | 5 | 5 | 3 | 3 | | 3 | 2 | 113 | 3 | 3 | heart | 3 | | 3 |
| Detroit Dark Red Mt. | 15 | 4 | 3 | 4 | 4 | 2 | 3 | yes | 3 | 3 | 99 | 3 | 3 | heart | 3 | | 3 |
| Detroit Supreme | 1 | 5 | 5 | 3 | 3 | 1 | 2 | yes | 4 | 3 | 97 | 4 | 4 | round | 4 | | 4 |
| Dragon | 8 | 2 | 2 | 4 | 4 | 1 | 3 | yes | 4 | 4 | 92 | 4 | 4 | heart | 2 | | 3 |
| Early Wonder Staysgreen | 16 | 4 | 3 | 4 | 4 | 3 | 2 | | 4 | 3 | 102 | 3 | 3 | top | 3 | | 2 |

* Table Beet Seed Companies 1993

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|---------------------|---------------|-----------------|--------------|--------------|---------------|
| 1. Alf Christiansen | 4. Bakker | 7. Elsoms | 10. Johnny's | 13. Nunhems | 16. Rogers NK |
| 2. Asgrow | 5. Bejo | 8. Mannenhogs | 11. Burpee | 14. Park | 17. Tezier |
| 3. A. L. Tozer | 6. Daehnfeldt | 9. Harris Moran | 12. Nichols | 15. Petoseed | 18. Vilmorin |

** 1 = poor, 5 = excellent

*** From May 11, 1993 planting

Table 1. Table Beet Variety Trial - First Planting (continued)

| Name | Seed Co.* | Emergence May 19 1-5** | Vigor June 4 1-5** | Leaf Redness 1=Green 5=Red June 14 | Disease Rating, July 29 1 = Minimal, 5 = Severe | | | Tops Vigor** | Bulbing Vigor** | Approx. Days to Harvest*** | Root Smoothness** | Interior Root Color** | Root Shape | Root Uniformity** | Remarks | Overall Score** |
|----------------------|-----------|------------------------|--------------------|------------------------------------|---|----------|--------|--------------|-----------------|----------------------------|-------------------|-----------------------|------------|-------------------|---------------|-----------------|
| | | | | | Leaf Redness | Leafspot | Virus | | | | | | | | | |
| Early Wonder Talltop | 15 | 4 | 3 | 4 | 2 | 2 | | 5 | 4 | 92 | 3 | 2 | heart | 3 | slight zoning | 2 |
| Early Wonder G.T. | 15 | 5 | 3 | 5 | 3 | 3 | | 2 | 1 | 112 | 2 | 2 | heart | 3 | | 1 |
| EXP 6812 | 4 | 4 | 4 | 4 | 1 | 1 | | 4 | 3 | 102 | 4 | 4 | round | 5 | nice roots | 4 |
| Forono LD original | 6 | 3 | 2 | 4 | 4 | 3 | | 4 | 4 | 112 | 4 | 4 | cylinder | 4 | | 4 |
| Green Top Bunching | 15 | 2 | 3 | 4 | 1 | 3 | | 3 | 2 | 113 | 3 | 4 | top | 2 | color varies | 2 |
| Ivax | 13 | 2 | 2 | 4 | 4 | 2 | | 3 | 3 | 99 | 4 | 4 | heart | 3 | | 3 |
| King Red | 16 | 3 | 3 | 4 | 1 | 2 | | 4 | 3 | 106 | 3 | 4 | heart | 3 | rat tail | 3 |
| Kosak Long | 8 | 4 | 3 | 4 | 4 | 3 | | 3 | 4 | 106 | 3 | 3 | spindle | 2 | | 2 |
| Mobile | 5 | 2 | 2 | 3 | 2 | 3 | yes | 3 | 4 | 92 | 4 | 2 | top | 3 | zoning | 2 |
| Mona LD original | 6 | 3 | 3 | 4 | 3 | 3 | severe | 4 | 2 | 106 | 3 | 3 | top | 3 | | 3 |
| Monaco | 7 | 4 | 4 | 4 | 1 | 2 | yes | 5 | 4 | 92 | 3 | 3 | flat | 1 | | 2 |
| Moneta | 5 | 2 | 1 | 3 | 1 | 3 | yes | 4 | 4 | 92 | 4 | 3 | heart | 3 | slight zoning | 3 |
| Monogram | 3 | 4 | 3 | 4 | 4 | 3 | | 2 | 3 | 99 | 3 | 3 | heart | 4 | | 4 |
| Pablo | 5 | 4 | 3 | 4 | 1 | 4 | | 4 | 3 | 97 | 4 | 3 | heart | 2 | slight zoning | 2 |
| Pacemaker III | 1 | 4 | 3 | 3 | 1 | 4 | yes | 5 | 5 | 97 | 3 | 4 | round | 4 | | 3 |
| Preco | 18 | 4 | 5 | 3 | 3 | 2 | yes | 4 | 2 | 106 | 3 | 3 | round | 3 | slight zoning | 2 |
| Red Ace | 1 | 5 | 5 | 3 | 1 | 3 | | 5 | 4 | 102 | 4 | 4 | round | 4 | | 4 |
| Red Ace | 10 | 3 | 4 | 2 | 1 | 2 | | 4 | 5 | 92 | 4 | 4 | heart | 4 | slight zoning | 5 |
| Rosette | 2 | 5 | 4 | 4 | 3 | 3 | | 5 | 3 | 106 | 3 | 3 | heart | 3 | | 3 |
| Rubia | 8 | 4 | 4 | 4 | 2 | 2 | severe | 5 | 4 | 97 | 4 | 2 | heart | 2 | slight zoning | 2 |
| Ruby Queen | 16 | 2 | 2 | 4 | 2 | 2 | | 4 | 3 | 102 | 3 | 3 | heart | 3 | | 3 |
| Ruby Queen | 15 | 5 | 4 | 4 | 3 | 3 | | 4 | 3 | 102 | 3 | 2 | heart | 4 | slight zoning | 3 |
| Ruby Queen | 9 | 4 | 3 | 5 | 3 | 2 | | 3 | 1 | 106 | 3 | 3 | round | 3 | | 3 |
| Ruby Queen | 14 | 5 | 4 | 4 | 3 | 3 | | 3 | 2 | 107 | 3 | 2 | heart | 2 | slight zoning | 2 |
| Warrior | 9 | 5 | 3 | 5 | 3 | 2 | yes | 3 | 3 | 99 | 3 | 2 | round | 4 | orange red | 3 |

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|---------------------|---------------|-----------------|--------------|--------------|---------------|
| 1. Alf Christiansen | 4. Bakker | 7. Elsoms | 10. Johnny's | 13. Nunhems | 16. Rogers NK |
| 2. Asgrow | 5. Bejo | 8. Mannenhogs | 11. Burpee | 14. Park | 17. Tezier |
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|-----------------------|-----------------------------|-------------------------|--|--|----------|--------|----------------|-------------------|--------------------------------------|--------------------------|---------------------------------|---------------|--------------------------|---------------|-------------------|
| | | | | Leaf Redness | Leafspot | Virus | | | | | | | | | |
| PI 105335 China | 3 | 3 | 5 | 4 | 1 | severe | 5 | 4 | 99 | 2 | 2 | heart | 1 | | 1 |
| PI 109039 Turkey | 3 | 3 | 4 | 3 | 2 | yes | 5 | 5 | 92 | 1 | 1 | heart | 1 | | 1 |
| PI 116906 Afghanistan | 3 | 3 | 3 | 1 | 2 | | 5 | 5 | 92 | 1 | 1 | heart | 1 | | 1 |
| PI 120707 Turkey | 3 | 3 | 4 | 3 | 2 | severe | 5 | 4 | 102 | 1 | 1 | heart | 1 | severe zoning | 1 |
| PI 141919 China | 3 | 4 | 2 | 2 | 1 | severe | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | |
| PI 144675 Iran | 3 | 4 | 2 | 2 | 1 | severe | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | |
| PI 148625 Iran | 2 | 2 | 3 | 2 | 1 | | 5 | 5 | 92 | 1 | 1 | heart | 1 | | 1 |
| PI 163179 India | 2 | 3 | 4 | 1 | 2 | yes | 5 | 5 | 92 | 3 | 2 | heart | 3 | zoning | 2 |
| PI 163182 India | 2 | 3 | 4 | 2 | 3 | severe | 5 | 5 | 92 | 3 | 2 | heart | 3 | zoning | 2 |
| PI 164292 India | 2 | 2 | 4 | 1 | 2 | severe | 5 | 5 | 92 | 2 | 2 | heart | 2 | zoning | 2 |
| PI 164659 India | 3 | 3 | 3 | 1 | 2 | severe | 5 | 5 | 92 | 2 | 2 | heart | 2 | zoning | 2 |
| PI 164805 India | 2 | 2 | 4 | 1 | 3 | severe | 5 | 5 | 92 | 3 | 2 | heart | 2 | zoning | 2 |
| PI 164810 India | 2 | 3 | 3 | 1 | 2 | | 5 | 5 | 92 | 3 | 2 | heart | 2 | zoning | 2 |
| PI 164968 Turkey | 3 | 4 | 3 | 3 | 3 | yes | 5 | 5 | 92 | 1 | 1 | top | 1 | severe zoning | 1 |
| PI 165485 India | 3 | 4 | 4 | 4 | 3 | yes | 3 | 3 | 92 | 3 | 3 | heart | 2 | zoning | 2 |
| PI 169019 Turkey | 1 | 1 | 5 | 3 | 3 | severe | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | 1 |
| PI 169021 Turkey | 3 | 3 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 169028 Turkey | 4 | 4 | 4 | 4 | 2 | | 4 | 4 | 92 | 1 | 1 | heart | 1 | | 1 |
| PI 169029 Turkey | 2 | 2 | 4 | 3 | 2 | yes | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | 1 |
| PI 169032 Turkey | 2 | 4 | 3 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 172729 Turkey | 1 | 4 | 3 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | | |
| PI 172731 Turkey | 1 | 4 | 2 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | | |
| PI 172739 Turkey | 1 | 4 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 172741 Turkey | 2 | 4 | 2 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 173842 India | 4 | 5 | 4 | 3 | 3 | | 5 | 5 | 92 | 2 | 1 | heart | 1 | severe zoning | 1 |
| PI 173844 India | 2 | 4 | 4 | 4 | 3 | | 5 | 5 | 92 | 3 | 1 | heart | 1 | severe zoning | 1 |
| PI 174059 Turkey | 2 | 5 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 177272 Turkey | 2 | 5 | 1 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 179175 Iraq | 2 | 5 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 179180 Turkey | 1 | 3 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |

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** From May 11, 1993 planting

Table 1. Table Beet Variety Trial - First Planting (continued)

| Name | Emergence May 19 1-5* | Vigor June 4 1-5* | Leaf Redness 1=Green 5=Red June 14 | Disease Rating, July 29 1 = Minimal, 5 = Severe | | | Tops Vigor* | Bulbing Vigor* | Approx. Days to Har- vest** | Root Smooth- ness* | Inter- ior Root Color* | Root Shape | Root Uni- formity* | Remarks | Overall Score* |
|--------------------------|-----------------------------|-------------------------|--|--|----------|--------|----------------|-------------------|--------------------------------------|--------------------------|---------------------------------|---------------|--------------------------|---------------|-------------------|
| | | | | Leaf Redness | Leafspot | Virus | | | | | | | | | |
| PI 179844 India | 2 | 4 | 1 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 179845 India | 1 | 3 | 1 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 180410 India | 2 | 4 | 2 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 181011 India | 2 | 3 | 1 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 181718 Lebanon | 2 | 3 | 4 | 1 | 2 | | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | 1 |
| PI 181859 Syria | 4 | 5 | 3 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 181930 Syria | 1 | 3 | 5 | 3 | 2 | | 4 | 4 | 92 | 1 | 1 | flat | 1 | severe zoning | 1 |
| PI 205987 Sweden | 2 | 2 | 5 | 2 | 1 | severe | 2 | 2 | 106 | 1 | 1 | heart | 1 | seg gm lvs | |
| PI 222233 Iran | 3 | 3 | 3 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 222234 Iran | 2 | 1 | 2 | 1 | 1 | yes | 5 | 4 | 92 | 1 | 1 | flat | 1 | severe zoning | 1 |
| PI 224684 Myanmar | 2 | 2 | 3 | 3 | 2 | | 5 | 5 | 92 | 1 | 1 | top | 1 | severe zoning | 1 |
| PI 251511 Iran | 1 | 2 | 3 | 1 | 2 | | 5 | 5 | 92 | 1 | 1 | heart | 1 | severe zoning | 1 |
| PI 251512 Iran | 2 | 1 | 4 | 1 | 2 | | 5 | 5 | 92 | 3 | 3 | heart | 1 | severe zoning | 1 |
| PI 269308 Sweden | 2 | 3 | 5 | 1 | 4 | | 5 | 4 | 92 | 3 | 1 | heart | 1 | zoning | |
| PI 269309 Sweden | 2 | 2 | 5 | 1 | 2 | | 4 | 3 | 92 | 3 | 2 | heart | 3 | zoning | |
| PI 269310 Sweden | 1 | 1 | 4 | 4 | 3 | | 4 | 3 | 92 | 3 | 2 | heart | 2 | zoning | |
| PI 271439 India | 2 | 3 | 4 | 3 | 3 | yes | 4 | 2 | 92 | 2 | 1 | heart | 1 | zoning | |
| PI 285589 Poland | 2 | 3 | 5 | 4 | 2 | yes | 3 | 2 | 97 | 1 | 2 | flat | 1 | zoning | |
| PI 285590 Poland | 2 | 3 | 5 | 3 | 2 | yes | 3 | 2 | 102 | 1 | 1 | flat | 2 | zoning | |
| PI 285591 Poland | 2 | 1 | 5 | 3 | 2 | yes | 4 | 4 | 92 | 2 | 1 | heart | 1 | severe zoning | |
| PI 293419 USSR | 2 | 1 | 4 | 3 | 2 | yes | 4 | 3 | 97 | 3 | 3 | heart | 3 | | |
| PI 293420 USSR | 1 | 1 | 4 | 2 | 2 | yes | 4 | 4 | 92 | 3 | 3 | heart | 3 | | |
| PI 323938 United Kingdom | 2 | 1 | 4 | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | bolt | |
| PI 357351 Yugoslavi | 2 | 3 | 5 | 4 | 3 | yes | 5 | 4 | 92 | 4 | 1 | heart | 2 | zoning | |
| PI 357357 Yugoslavia | 1 | 1 | 5 | 5 | | | 5 | 5 | 92 | 1 | 1 | heart | 2 | severe zoning | |

* 1 = poor, 5 = excellent

** From May 11, 1993 planting

Table 2. Table Beet Variety Trial - Second Planting. Evaluated October 5, 1993

| Name | Seed Co.* | Top Vigor** | Crown Size** | Root Color** | Root Smoothness** | Approx. Days to Harvest*** | Overall Score** | Comments |
|---------------------------------|-----------|-------------|--------------|--------------|-------------------|----------------------------|-----------------|--|
| Action | 5 | 5 | 2 | 3 | 3 | 104 | 3 | nice tops, zoning in larger sizes |
| Asgrow Wonder | 2 | 4 | 2 | 3 | 3 | 125 | 2 | powdery mildew |
| Avenger | 9 | 4 | 4 | 2 | 2 | 114 | 2 | zoning, light color root, large top |
| Big Red | 1 | 3 | 3 | 4 | 3 | 114 | 3 | |
| Boldet | | 4 | 3 | 2 | 2 | 111 | 2 | zoning |
| Bolivar | 13 | 5 | 3 | 3 | 3 | 104 | 3 | |
| Boston | 3 | 5 | 2 | 4 | 3 | 104 | 3 | |
| Braco | 18 | 2 | 3 | 4 | 4 | 104 | 3 | |
| Crimson Tide | 15 | 4 | 4 | 2 | 2 | 118 | 2 | zoning |
| CXA 6023 | 1 | 4 | 3 | 3 | 3 | 114 | 3 | |
| CXA 9014 | 1 | 4 | 3 | 4 | 3 | 104 | 3 | |
| CXA 9026 | 1 | 4 | 2 | 3 | 3 | 118 | 3 | cylindrical |
| CXA 2517 | 1 | 4 | 2 | 3 | 3 | 114 | 3 | |
| CXA 6024 | 1 | 5 | 4 | 4 | 4 | 104 | 4 | nice color |
| CXA 2520 | | 4 | 3 | 4 | 3 | 111 | 3 | |
| Cylindra | 1 | 3 | 2 | 2 | 3 | 125 | 2 | |
| Cyndor 1/2 long proc. strain | 1 | 3 | 2 | 2 | 3 | 114 | 3 | |
| Darko | 18 | 4 | 2 | 3 | 4 | 104 | 3 | |
| Detroit Dark Red St | 15 | 4 | 3 | 2 | 3 | 114 | 2 | zoning |
| Detroit Dark Red Short Top | 9 | 3 | 2 | 1 | 2 | 104 | 2 | powdery |
| Detroit & Elsom's Crimson Globe | 7 | 5 | 2 | 4 | 4 | 104 | 4 | nice tops, round uniform roots, good color |
| Detroit Lorette | 17 | 4 | 4 | 3 | 3 | 114 | 2 | variable root shape |
| Detroit Dark Red Mt. | 15 | 4 | 3 | 3 | 2 | 104 | 2 | |
| Detroit Supreme | 1 | 4 | 3 | 4 | 2 | 111 | 3 | |
| Detroit Short-leaved Imp. LD | 6 | 5 | 2 | 2 | 3 | 104 | 2 | zoning |
| Detroit Ameliuree (imp.) | 17 | 4 | 2 | 2 | 2 | 114 | 2 | zoning |
| Dragon | 8 | 4 | 2 | 2 | 4 | 114 | 2 | zoning |
| Early Wonder Green Top | 15 | 4 | 4 | 3 | 2 | 114 | 2 | |
| Early Wonder Talltop | 15 | 5 | 4 | 1 | 2 | 114 | 2 | zoning |
| Early Wonder Staysgreen | 16 | 5 | 4 | 2 | 2 | 114 | 2 | |

* Table Beet Seed Companies 1993

1. Alf Christiansen
2. Asgrow
3. A. L. Tozer

4. Bakker
5. Bejo
6. Daehnfeldt

7. Elsoms
8. Mannenhogs
9. Harris Moran

10. Johnny's
11. Burpee
12. Nichols

13. Nunhems
14. Park
15. Petoseed

16. Rogers NK
17. Tezier
18. Vilmorin

** 1 = poor, 5 = excellent

*** From June 23, 1993 planting

Table 2. Table Beet Variety Trial - Second Planting. Evaluated October 5, 1993 (continued)

| Name | Seed Co.* | Top Vigor** | Crown Size** | Root Color** | Root Smoothness** | Approx. days to Harvest*** | Overall Score** | Comments |
|--------------------|-----------|-------------|--------------|--------------|-------------------|----------------------------|-----------------|--|
| EXP 6812 | 4 | 4 | 2 | 4 | 4 | 114 | 4 | uniform, good roots |
| Forono LD original | 6 | 4 | 2 | 3 | 3 | 114 | 3 | |
| Green Top Bunching | 15 | 5 | 4 | 1 | 2 | 114 | 2 | zoning |
| Ivax | 13 | 5 | 4 | 4 | 3 | 111 | 3 | |
| King Red | 16 | 4 | 2 | 3 | 3 | 104 | 3 | |
| Kosak Long | 8 | 5 | 4 | 2 | 4 | 104 | 3 | long cylindrical, zoning |
| Mobile | 5 | 5 | 2 | 4 | 3 | 104 | 3 | nice top, but heart shaped, no disease |
| Mona LD original | 6 | 4 | 2 | 3 | 3 | 111 | 3 | |
| Monaco | 7 | 4 | 2 | 2 | 2 | 104 | 2 | |
| Moneta | 5 | 4 | 2 | 4 | 4 | 111 | 3 | |
| Monogram | 3 | 2 | 2 | 4 | 4 | 114 | 2 | powdery, small tops, nice round beets, some zoning |
| Pablo | 5 | 4 | 3 | 2 | 2 | 104 | 3 | nice tops, some zoning |
| Pacemaker III | 1 | 3 | 2 | 3 | 4 | 104 | 3 | nice beet |
| Preco | 18 | 4 | 2 | 2 | 2 | 111 | 2 | |
| Red Ace | 1 | 5 | 3 | 4 | 2 | 114 | 4 | good tops, round, good color |
| Rosette | 2 | 4 | 2 | 2 | 2 | 114 | 2 | zoning |
| Rubia | 8 | 5 | 3 | 3 | 3 | 104 | 3 | |
| Ruby Queen | 15 | 5 | 3 | 2 | 2 | 104 | 2 | zoning |
| Ruby Queen | 16 | 3 | 3 | 4 | 3 | 104 | 4 | nice round root, nice color |
| Ruby Queen | 9 | 3 | 2 | 3 | 2 | 125 | 2 | |
| Ruby Queen | 14 | 4 | 3 | 3 | 3 | 104 | 3 | |
| Warrior | 9 | 2 | 3 | 4 | 2 | 104 | 2 | |

* Table Beet Seed Companies 1993

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|---------------------|---------------|-----------------|--------------|--------------|---------------|
| 1. Alf Christiansen | 4. Bakker | 7. Elsoms | 10. Johnny's | 13. Nunhems | 16. Rogers NK |
| 2. Asgrow | 5. Bejo | 8. Mannenhogs | 11. Burpee | 14. Park | 17. Tezier |
| 3. A. L. Tozer | 6. Daehnfeldt | 9. Harris Moran | 12. Nichols | 15. Petoseed | 18. Vilmorin |

** 1 = poor, 5 = excellent

*** From June 23, 1993 planting