

# St. Helena Rootstock Survey Trial

(please see original St. Helena post for background information)

## 2020/21 - Juice Quality

### Achieving high soluble solids on multiple rootstocks

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CREC Citrus Plant Improvement*

# St. Helena Rootstock Survey Trial

- Location: Dundee, Polk county
- Scion: Vernia & Valquarius
- Rootstocks: large collection of new diploid and tetraploid rootstocks
- Date Planted: 2008 & 2010
- Design: According to the number of trees available
  - Replications: variable per rootstock
  - Plot size: 4-tree rectangular plots
  - Spacing: 9 x 20; 12 x 20; 15 x 25 ft.
- Data:
  - 2020/21: Juice Quality from harvest the last week of January, 2021.
- Trial status: **ACTIVE.**

## St. Helena Rootstock Survey Trial – Interpretive summary [2021]:

The St. Helena Rootstock Survey Trial is planted with two mid-season scions Valquarius and Vernia, with optimal harvest dates between mid-January and mid-February. Considering the poor soluble solids encountered from many commercial groves around the state this past season, we believe it is relevant to feature the juice quality data from the various scion/rootstock combinations in this trial. For both scions, the large majority of the rootstocks in this trial produced lbs. solids/box between 6.0 and 7.0, fruit harvested the last week of January. This is far above the state average, and we believe these positive results (now achieved in multiple years) are due to the nutrition program being utilized. The custom-blended Harrells CRF (controlled release fertilizer) product being used (see the primary St. Helena Trial data set for details) provides roots with elevated levels of all the important secondary and micronutrients year-round (including during the winter). The excellent fruit quality is even being observed on the rootstocks that have trees with thin canopies and lower yields. We believe that this approach minimizes the secondary and micronutrient deficiencies caused by HLB, especially in the roots. Our working hypothesis is that maintaining threshold levels of all critical secondary and micronutrients year-round helps trees maintain adequate vascular system function, and may also suppress *CLas* populations, and thus contributes to improved yields of high quality fruit (with little to no fruit drop). We are achieving similar results in other trials using either Harrells or Florikan CRF products containing an enhanced secondary and micronutrient package. It should also be noted that both Valquarius and Vernia fruit grown under such programs and harvested in January & February, routinely produce fruit of Valencia quality, and successful growers of these varieties should be paid accordingly.

Fig. 1. St. Helena Rootstock Survey Trial – Valquarius - Juice quality: Acid [2020/21].

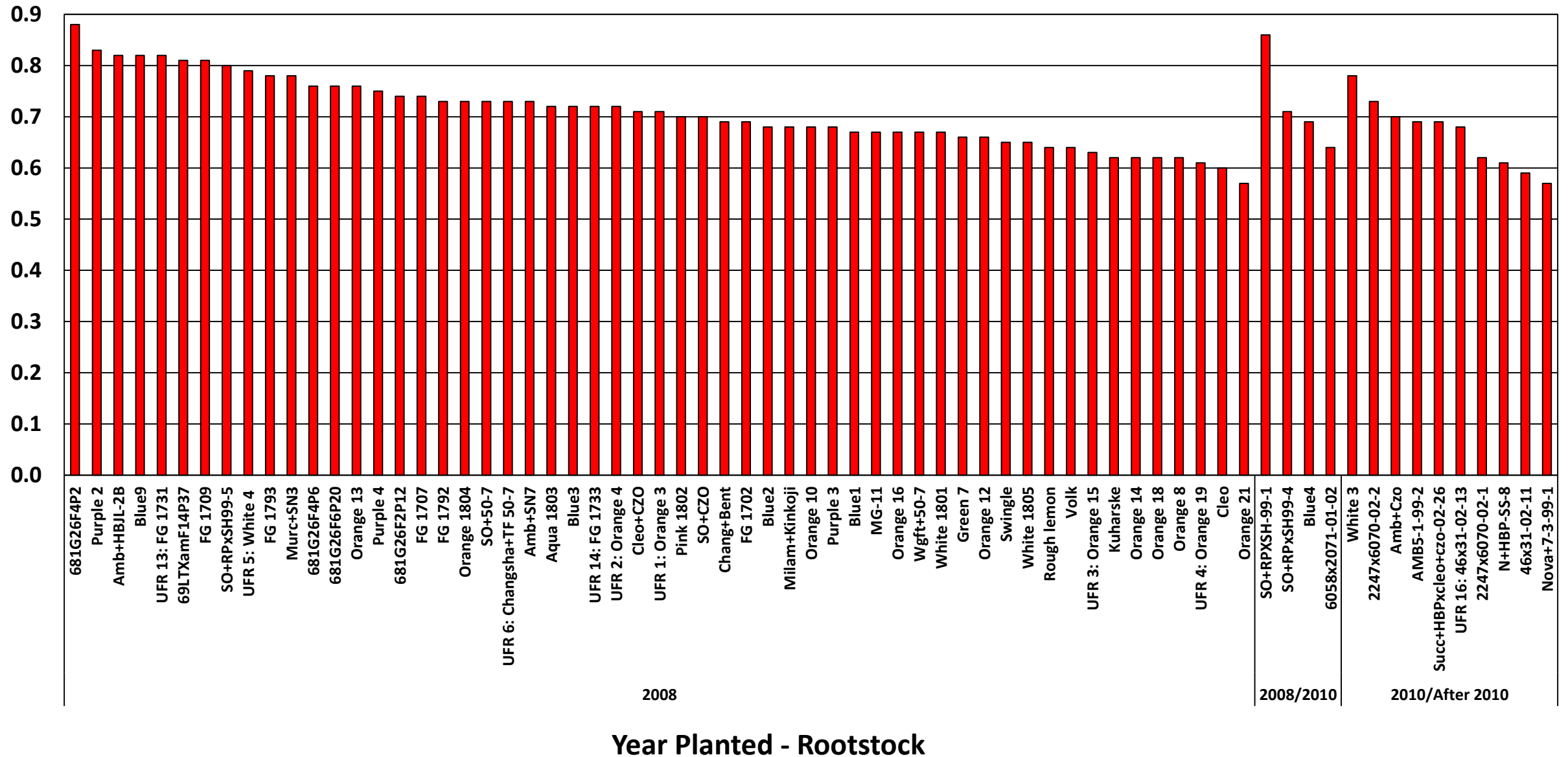


Fig. 2. St. Helena Rootstock Survey Trial – Vernia - Juice quality: Acid [2020/21].

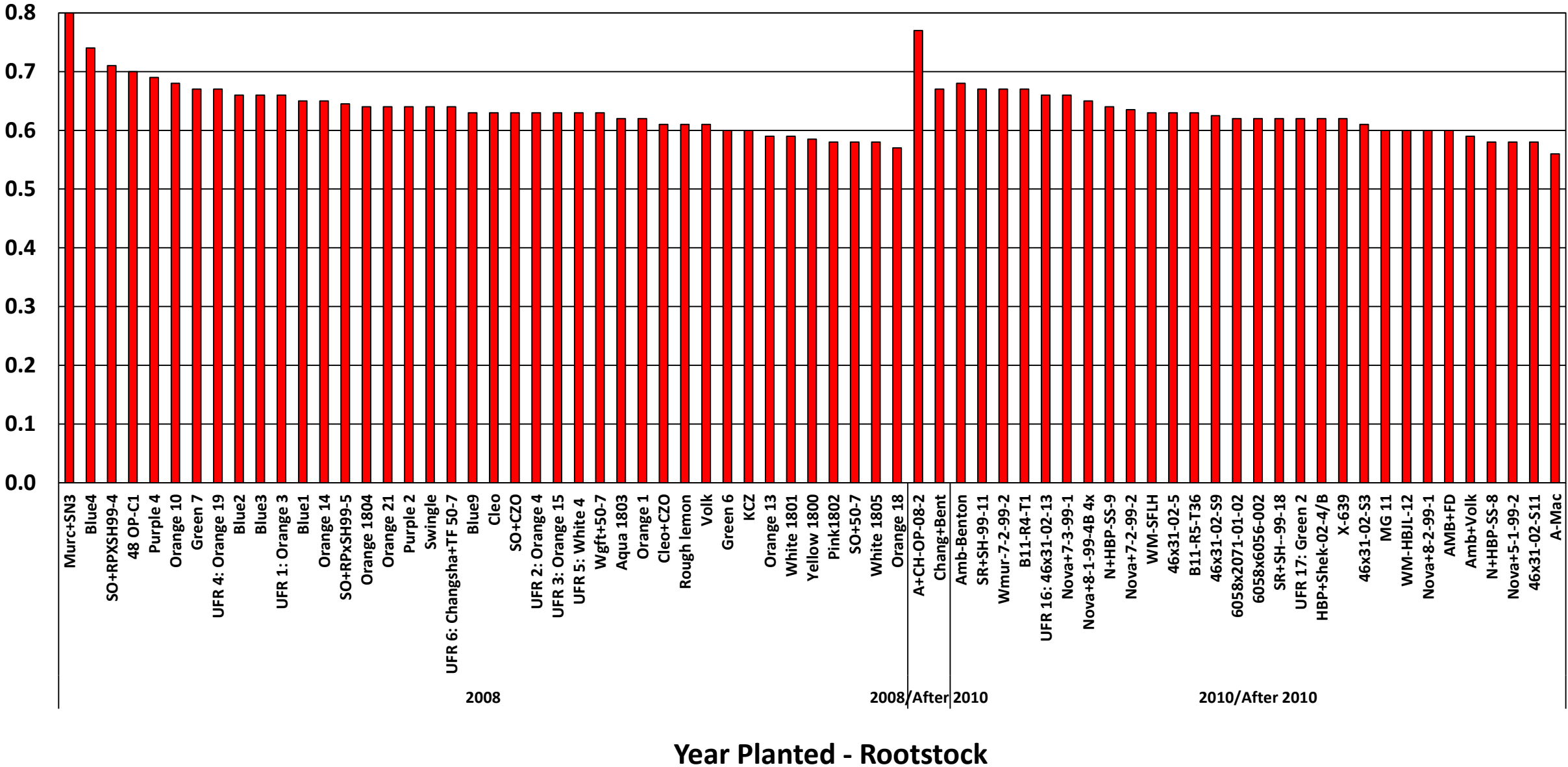


Fig. 3. St. Helena Rootstock Survey Trial – Valquarius - Juice quality: Brix [2020/21].

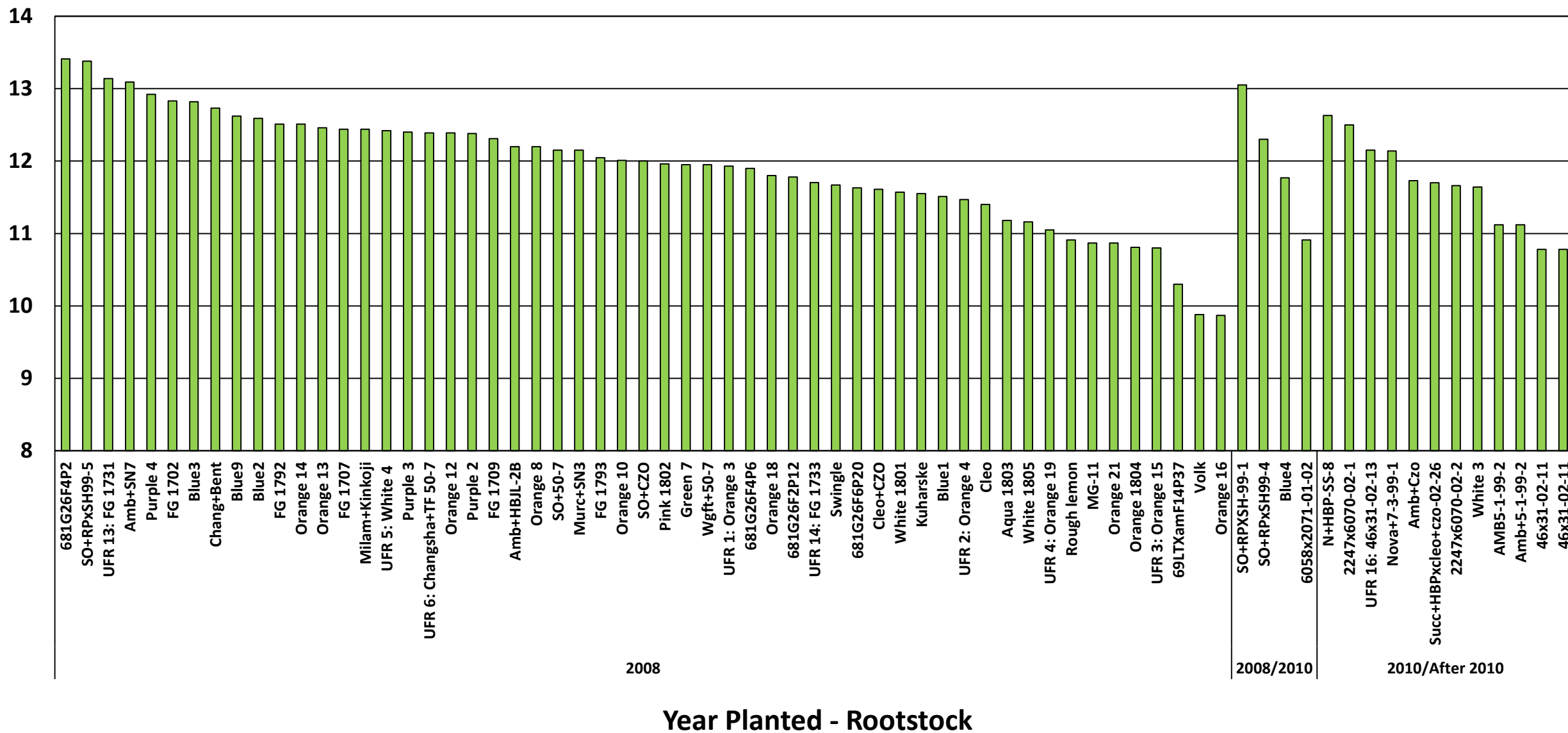


Fig. 4. St. Helena Rootstock Survey Trial – Vernia - Juice quality: Brix [2020/21].

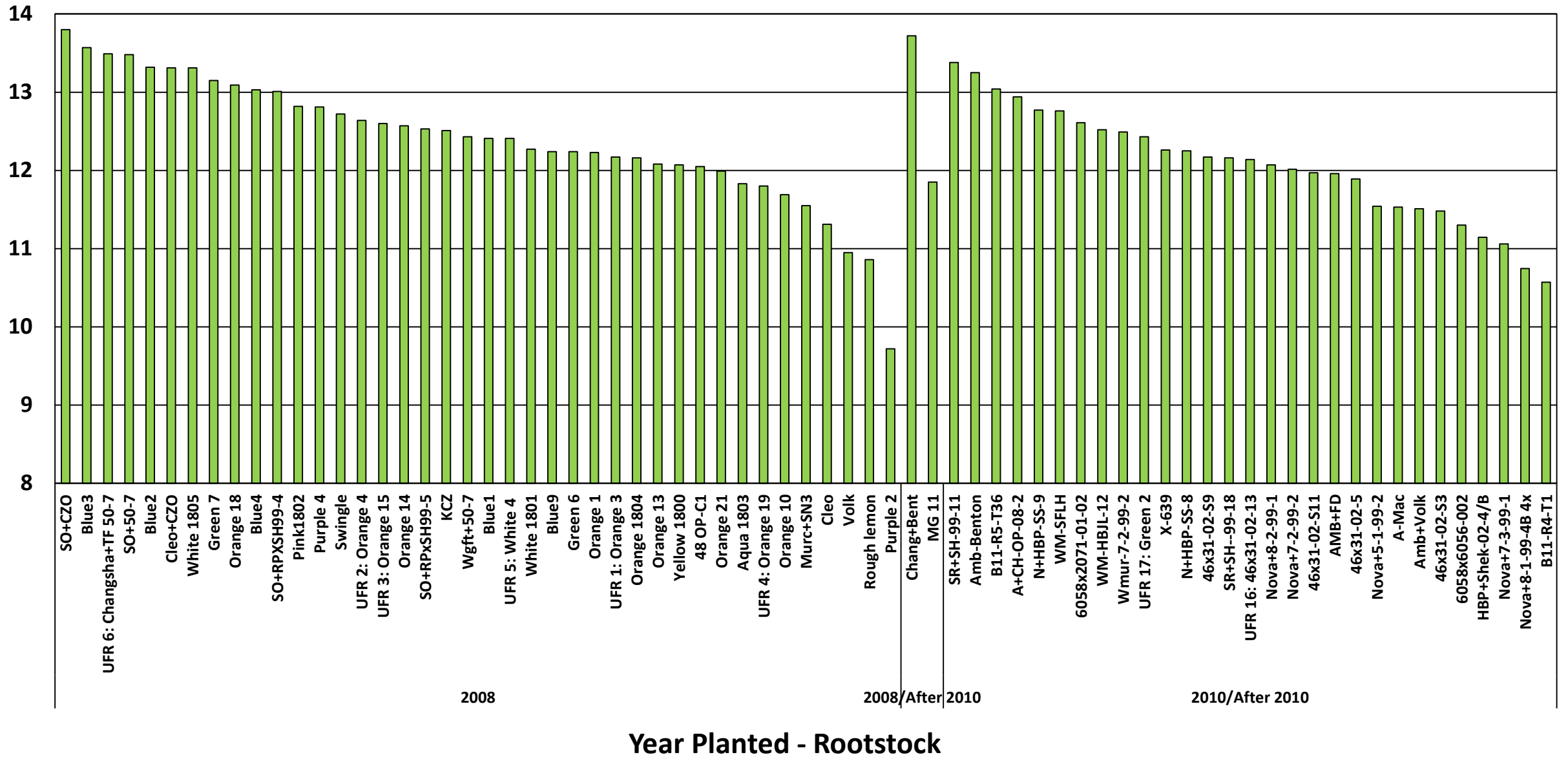


Fig. 5. St. Helena Rootstock Survey Trial – Valquarius - Juice quality: Ratio [2020/21].

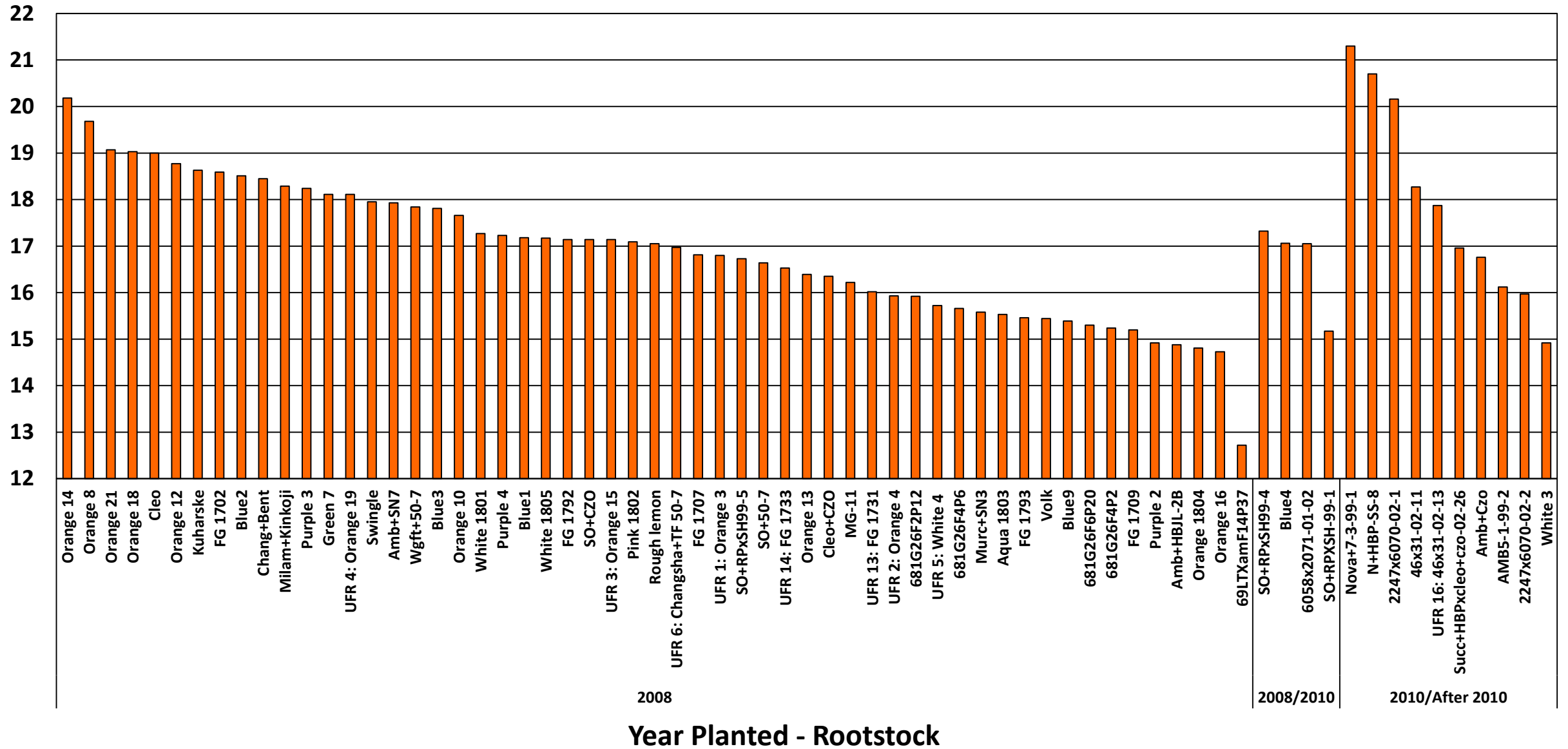




Fig. 6. St. Helena Rootstock Survey Trial – Vernia - Juice quality: Ratio [2020/21].

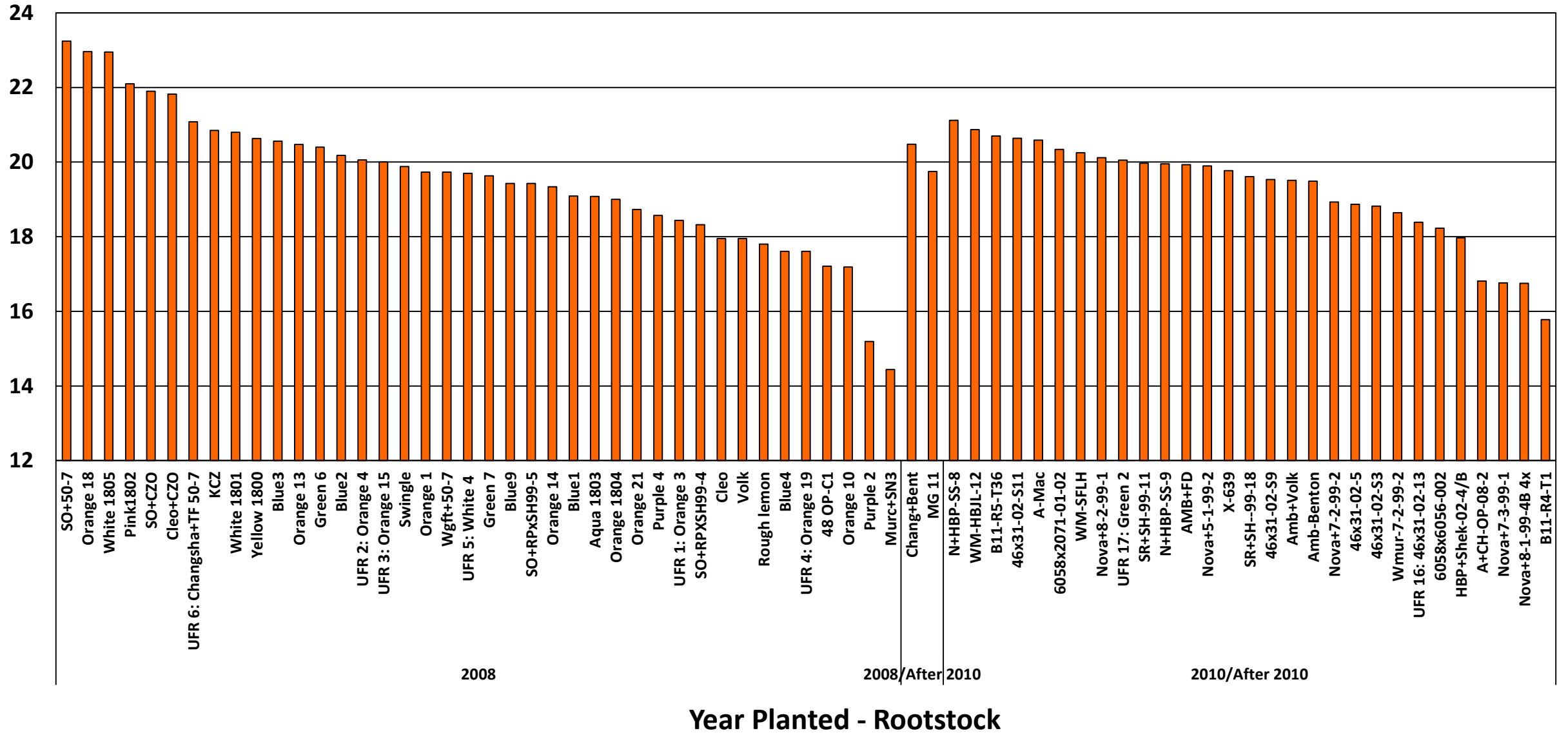


Fig. 7. St. Helena Rootstock Survey Trial – Valquarius - PS/box [2020/21].

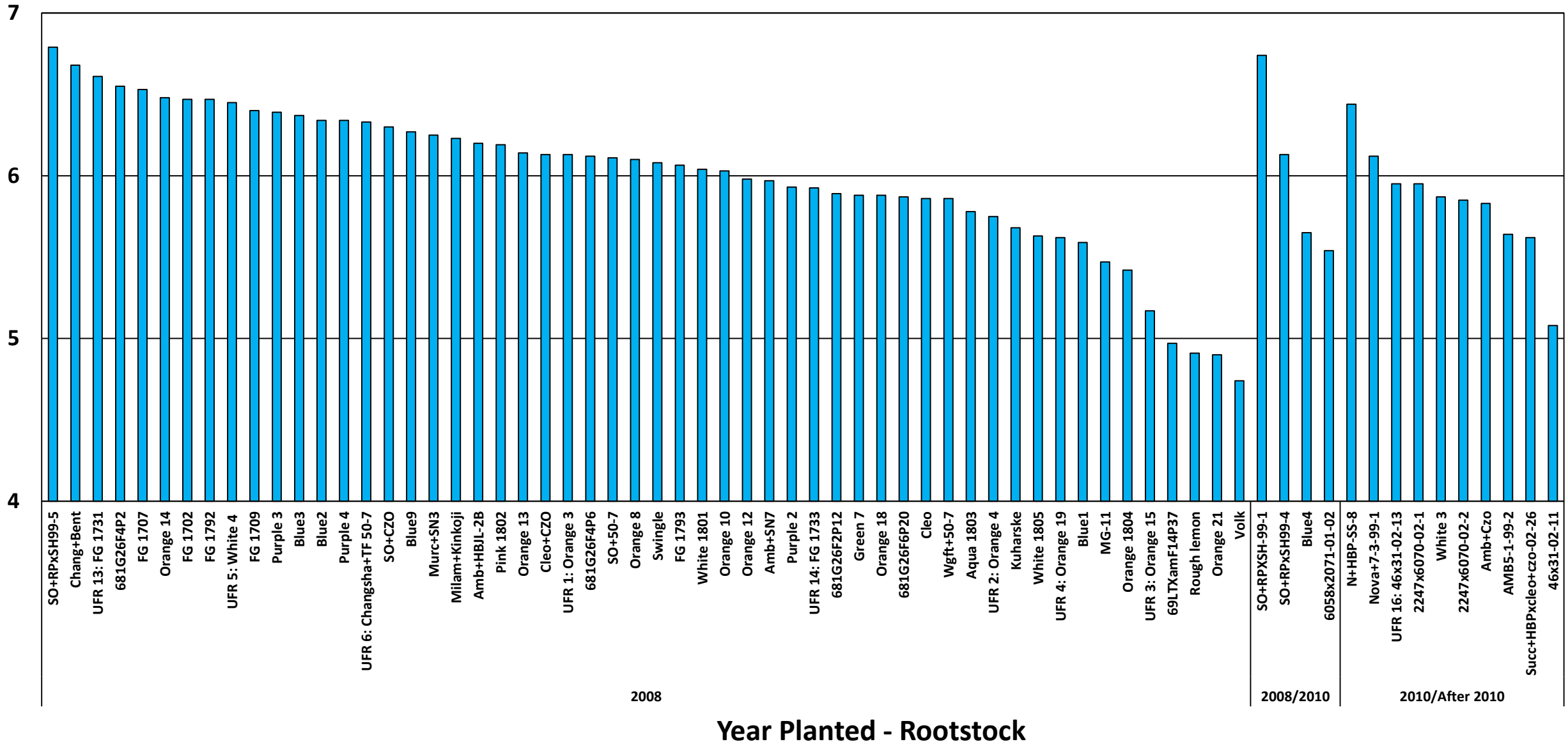


Fig. 8. St. Helena Rootstock Survey Trial – Vernia - PS/box [2020/21].

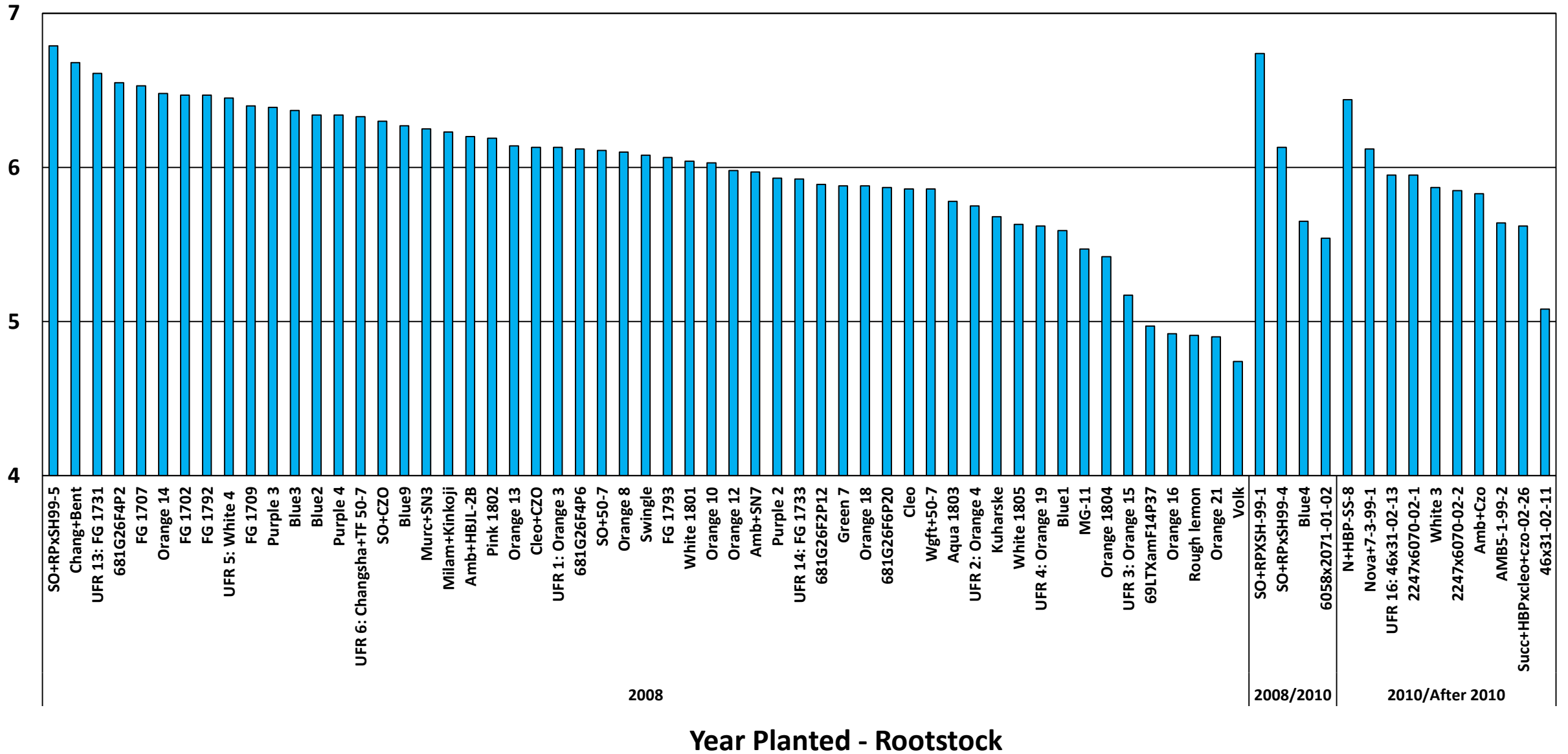


Fig. 9. St. Helena Rootstock Survey Trial – Valquarius - Juice quality: Color [2020/21].

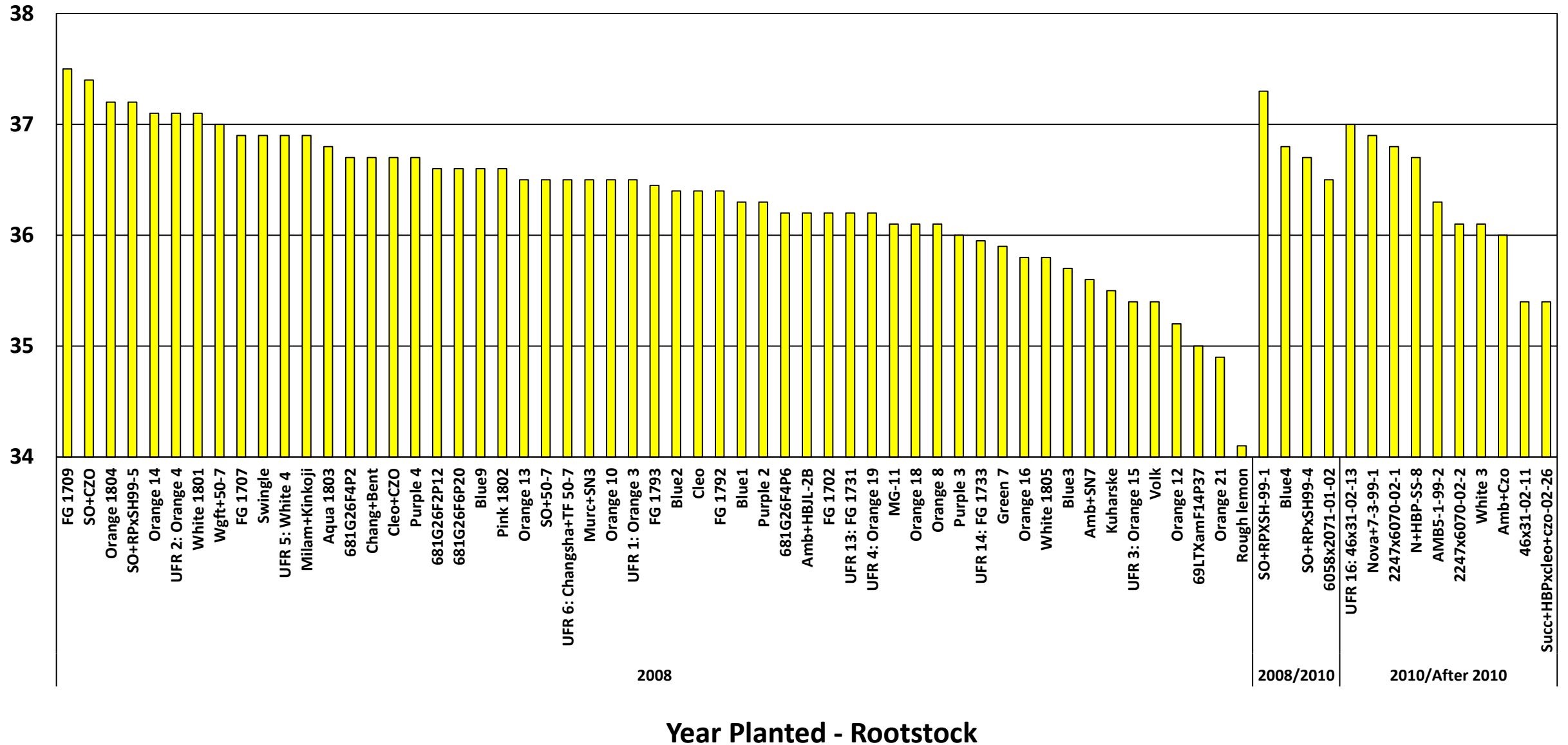


Fig. 10. St. Helena Rootstock Survey Trial – Vernia - Juice quality: Color [2020/21].

