

Titled “2013 Annual Report”

Marquette Propagation Trial Summary & Field Study

Greenhouse Evaluation at University of Wisconsin Peninsular Research Station (P.A.R.S)

4/24 cuttings taken in field, stored overnight in plant cooler at 40°F.

4/25 cuttings stuck in Pronto Tubes and Cubes in the greenhouse.

Cuttings were treated with the various root promoting compounds according to manufacture directions. All treated cutting were dipped to a depth of 4cm at the base of each.

6/17 half of the cuttings (22 replications) were removed from the propagation media and rated yes/no for leaf and root production, numbers of rooted nodes were counted and a root health rating recorded according to the following scale:

- 1) LIGHT callus present and up to 5 roots
- 2) MODERATE 5-10 roots present
- 3) HEAVY 10 or more roots present

Marquette grape cutting propagation response to Pronto Root Tube and Monarch Zipset Plant Band containers and various rooting hormonal treatments.

CUBES GREENHOUSE

| Trt | | Leaf Presence | Root Presence | Cutting Health Rating | # Nodes Rooted | % Alive | rank |
|-----|----------------------------|---------------|---------------|-----------------------|----------------|---------|------|
| CC | Clonex Rooting Compound | 84.6% | 92.3% | 2.7 | 1.7 | 88.5% | 5 |
| DG | Dip & Grow (diluted to 5X) | 96.2% | 100.0% | 3.0 | 2.3 | 100.0% | 1 |
| O | Olivia's Cloning Gel | 96.2% | 96.2% | 2.9 | 1.8 | 96.2% | 2 |
| P | Pronto Root Rooting Gel | 92.3% | 92.3% | 2.7 | 1.7 | 92.3% | 4 |
| X | Untreated Control | 96.2% | 100.0% | 2.8 | 1.7 | 96.2% | 3 |
| | | 93.1% | 96.2% | | | | |
| | | 94.6% | | | | | |

PRONTO

| Trt | | Leaf Presence | Root Presence | Cutting Health | # Nodes | % Alive | rank |
|-----|--|---------------|---------------|----------------|---------|---------|------|
|-----|--|---------------|---------------|----------------|---------|---------|------|

| | | | | Rating | Rooted | | |
|-------|----------------------------|-------|-------|--------|--------|-------|---|
| CC | Clonex Rooting Compound | 45.5% | 81.8% | 1.4 | 1.0 | 77.3% | 3 |
| DG | Dip & Grow (diluted to 5X) | 57.1% | 81.0% | 1.4 | 0.9 | 71.4% | 5 |
| O | Olivia's Cloning Gel | 77.3% | 86.4% | 1.6 | 1.2 | 90.9% | 1 |
| P | Pronto Root Rooting Gel | 59.1% | 72.7% | 1.3 | 1.0 | 72.7% | 4 |
| X | Untreated Control | 90.9% | 90.9% | 1.6 | 1.3 | 90.9% | 2 |
| 66.0% | 82.6% | 80.6% | | | | | |

Field Evaluation (P.A.R.S)

4/24 cutting taken in field, stored overnight in plant cooler at 40°F.

4/25 cuttings stuck in Pronto Tubes and Cubes in the greenhouse.

Cuttings were treated with the various root promoting compounds according to manufacture directions. All treated cutting were dipped to a depth of 4cm at the base of each.

6/17 half of the cuttings (22 replications) planted in nursery beds one foot apart.

8/14 in the field plant survival was recorded and all top growth was rated according to the following scale:

- 1) Minimal shoot growth - leaves present, but no extension growth
- 2) Moderate shoot growth - 30cm (1ft) or less shoot extension growth
- 3) Heavy 10 or more roots present - 31cm (1ft) or greater shoot extension growth

Marquette grape cutting propagation response to Pronto Root Tube and Monarch Zipset Plant Band containers and various rooting hormonal treatments.

| CUBES | FIELD | | |
|-------|-------|---------|--------------------------|
| Trt | | % Alive | Plant rank Growth Rating |

| Trt | Alive/Dead | rank | Rating |
|--------|----------------------------|--------|--------|
| CC | Clonex Rooting Compound | 80.0% | 4 2.3 |
| DG | Dip & Grow (diluted to 5X) | 73.1% | 5 2.2 |
| O | Olivia's Cloning Gel | 100.0% | 1 2.3 |
| P | Pronto Root Rooting Gel | 88.5% | 3 2.5 |
| X | Untreated Control | 91.7% | 2 2.3 |
| PRONTO | | 86.6% | |
| CC | Clonex Rooting Compound | 54.5% | 4 1.1 |
| DG | Dip & Grow (diluted to 5X) | 40.9% | 5 1.0 |
| O | Olivia's Cloning Gel | 72.7% | 1 1.1 |
| P | Pronto Root Rooting Gel | 59.1% | 2 1.1 |
| X | Untreated Control | 54.5% | 3 1.1 |
| | | 56.4% | |

5/17/13

Green Bay South West High School.

Teacher Tom Sabranek was educated on how to take cuttings from grape vine canes, and how to propagate grapes from cuttings with the same methods used above at P.A.R.S.

Students were given 400 Marquette cuttings and various brands of rooting hormones, along with prefilled flats of Pronto Plant Plant Bands and educated on how to propagate vines. Students were divided into 4 groups and asked to dip the cuttings into

the various rooting hormones, place the cuttings in the media, with a monitor and evaluation period of 6 weeks. This was phase one of an education program, and to get the educator, and students familiar with grape propagation. The results were recorded, but not kept track of at this trial due to various other greenhouse activity at the time that could have tampered with the ending results.

5/28/13

Students at South West High School were educated on vine trellis types, various methods of grape vine propagation, and learned about plant auxins.

Students then helped install and setup a micro learning vineyard, with posts, wires, and tie backs on two types of trellis designs (High Cordon, and Variable Shoot Positioning). They were taught how to use various vineyard tools such as crimpers, spinning jenny, and tie back anchors.

6/27/13

Teacher Tom Sabranek of South West High school planted 4 types of vines from half of which were propagated in biodegradable paper systems used at P.A.R.S, and half of which were purchased as two year old bare root vines. These will be used in part on the 2014 field study on growth rate of vines propagated in biodegradable systems vs bare root plantings.

Accomplishments/Milestones

Students have engaged in learning about plant propagation and a few have since helped out at area vineyards with high levels of interest in pursuing a career in viticulture.

Early trials are showing that propagating vines through biodegradable tubes can yield growth rates equal to or greater than nursery stock bare root vines even if planted the same year the cutting was taken.

Marquette Propagation Trial will be done again in the spring of 2015 with the aid of South West High School Students. They will take cuttings from vines in the field, and propagate vines using the methods conducted at P.A.R.S in 2013.

A 2014 field study will be conducted with students at South West High School in Green Bay, WI on 2 year old bare root nursery stock verses, vines propagated using biodegradable tubes such as Monarch Zip set plant bands, and Pronto Plant Propagation Systems.

2013 Pictorial



Student education on propagating grape vine.



Budding and leafing top, Root development right



Full Leaf and root development



Student Helping out at local vineyard.



Bare root planting of Marquette for Field Study: Biodegradable propagation vs Bare root Nursery Stock.