High Tunnel Production of Fresh Ginger Root (*Zingiber officinale*) and Turmeric (*Curcuma longa)*

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Ginger Seed Rhizomes

http://www.ctahr.hawaii.edu/oc/freepubs/pdf/scm-8.pdf: **Paul Hepperly and Francis Zee**

Ginger Seed-Rhizome

- Use only mature, clean, disease-free ginger hands
- Cut the selected hands into 2-4 oz sections, sterilizing the knife after each cut
- Each seed-piece should have two to four well developed “eyes.”
-Surface-sterilize the seed-pieces in a 10% solution of household bleach (1 part bleach in 9 parts water) for 10 minutes
-Cure the seed-pieces in a clean, disease-free area for three days or more before planting

(Hepperly, P. and Francis Zee, 2004)

In February, plant the seed piece in a one gallon pot ½-¾ filled with soilless potting mix (2 parts Compost, 2-4 parts Sphagnum Peat Moss, 1 part Perlite, and 1 part Vermiculite). Maintain in a greenhouse.

In April the potted plants are ready to be transplanted in the high tunnel.

May

August

September

Fertilizer

- Ginger responds well with adequate fertilizer application.
- For detail of fertilizer need see

- http://www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-8.pdf

Mounding (Hilling)

Is the periodic covering of the upward-expanding rhizomes. It is an important process in ginger production.

Mature Ginger

Baby Ginger

Armyworm, *Pseudaletia unipuncta* potential problem with high tunnel ginger production

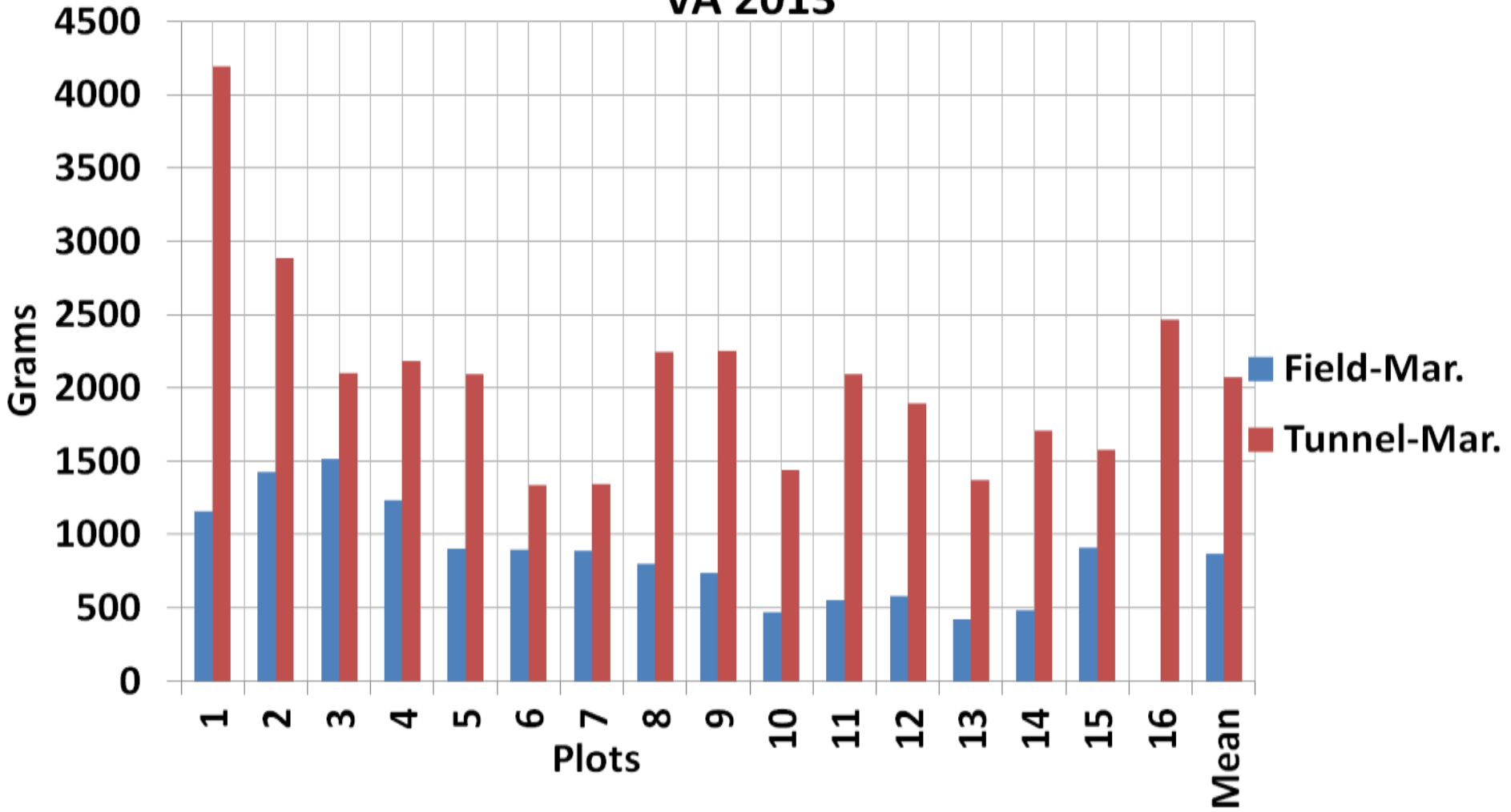
leaf-spot *Phyllosticta zingiberi*

Diseases

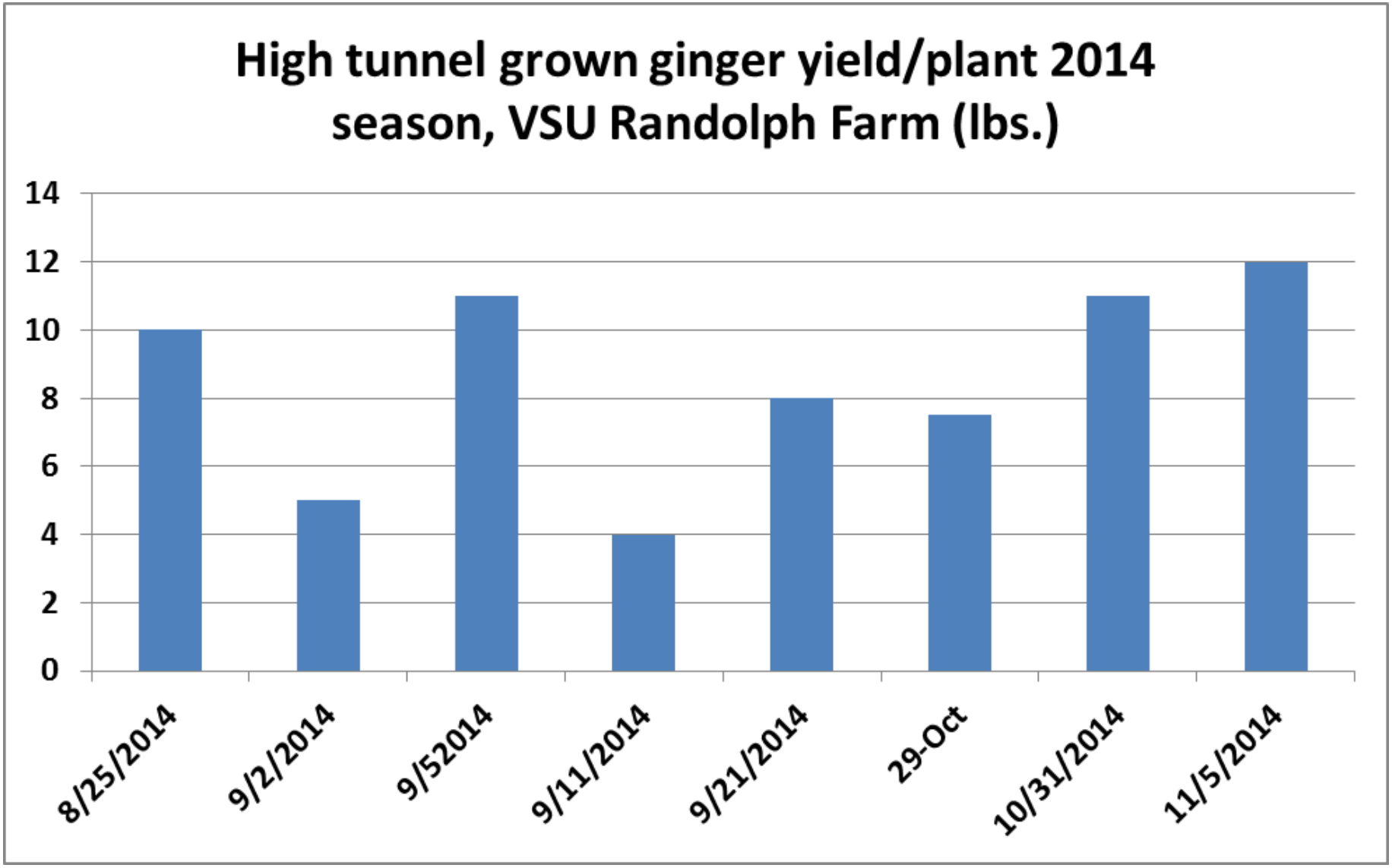
- Bacterial wilt (*Pseudomonas solanacearum*) - wilt of entire plant, rhizome rot.
- Bacterial soft rot (*Erwinia* sp.) - Leaf, pseudo stem and rhizome rot.
- Bacterial leaf blight (*Xanthomonas* sp.) - Leaf blight.
- Fusarium yellows and rhizome rot (*Fusarium oxysporum f. sp. zingiberi*) - Wilt of entire plant, rhizome rot.
- Pythium soft rot (*Pythium graminicola, P. splendens* and *P. aphanidermatum*): root rot, and soft rot of rhizomes.

Rhizome Rot
Fusarium oxysporum

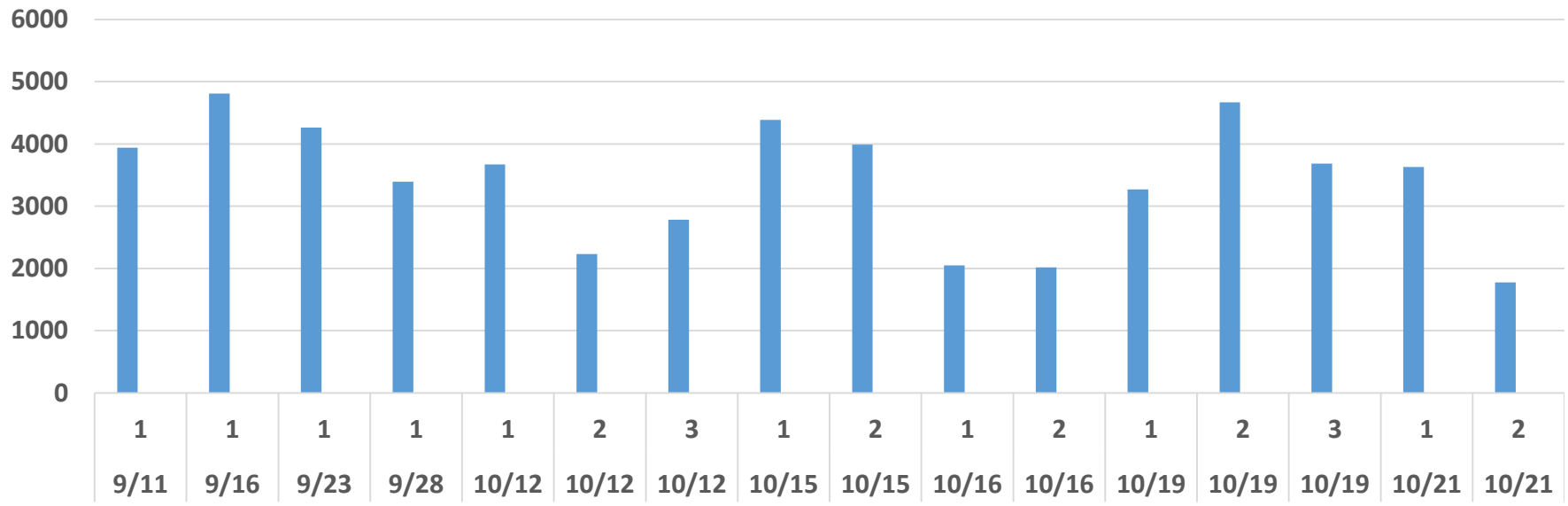
Marketable yield comparison of ginger root (gr.), grown under high tunnel and field conditions, VSU, Petersburg, VA 2013



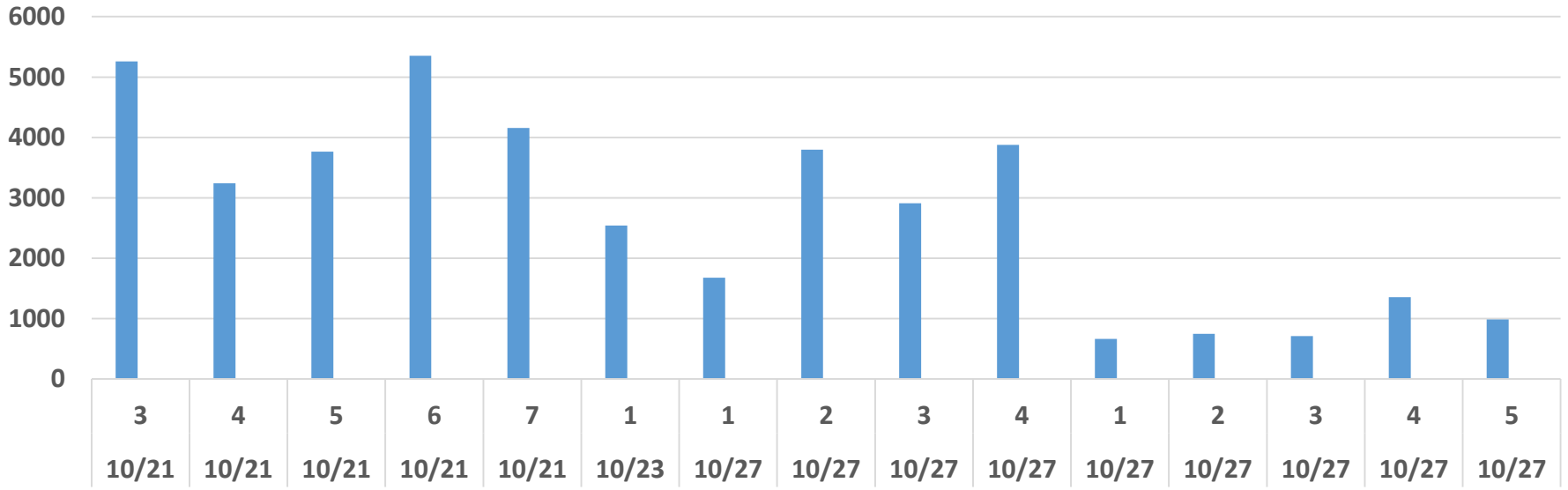
Harvest begun: Field and High tunnel 10/8/2013
Harvest ended: Field, 10/31/2013 and High tunnel, 12/05/2013

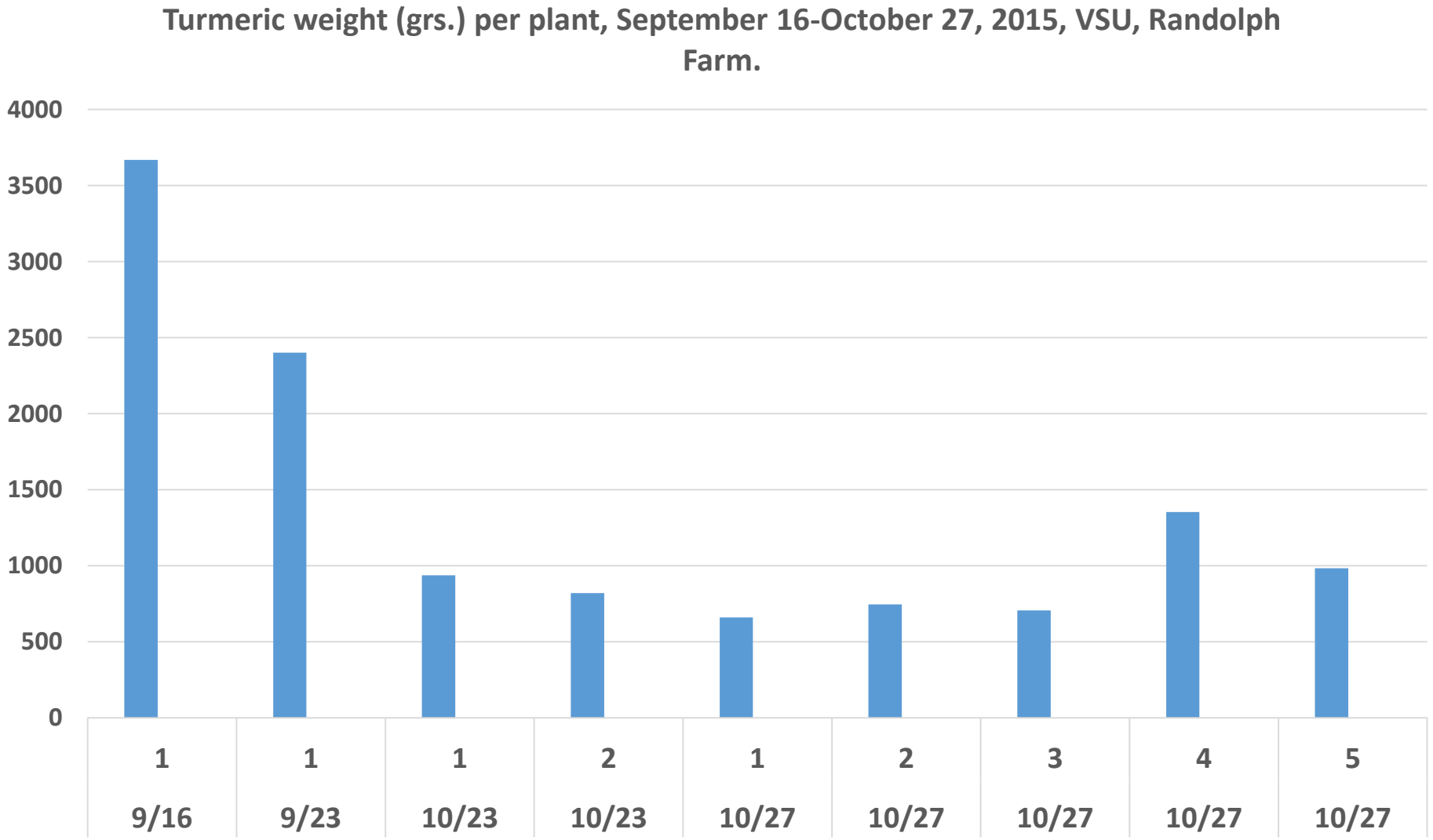

High tunnel grown ginger yield/plant 2014 season, VSU Randolph Farm (lbs.)
14
12
10
8
6
4
2
0
8/25/2014
9/2/2014
9/52014
9/11/2014
9/21/2014
29-Oct
10/31/2014
11/5/2014

Ginger weight per plant (gr.), September 11- October 21, 2015, VSU Randolph Farm



Ginger weight (grs.) per plant, October 21-October27, 2015, VSU, Randolph Farm




Turmeric weight (grs.) per plant, September 16-October 27, 2015, VSU, Randolph Farm.
4000
3500
3000
2500
2000
1500
1000
500
0
1
9/16
1
9/23
1
10/23
2
10/23
1
10/27
2
10/27
3
10/27
4
10/27
5
10/27

Turmeric, *Curcuma longa*

- Is a rhizomatous herbaceous perennial plant of the ginger family, Zingiberaceae.
- It is native in Southeast Asia. Growing turmeric requires 9-11 month from planting the rhizome seed pieces until the harvest.
- In temperate zones as in Virginia, where the growing season is 7-8 month, there is a need to grow turmeric in high tunnel structure

Turmeric