

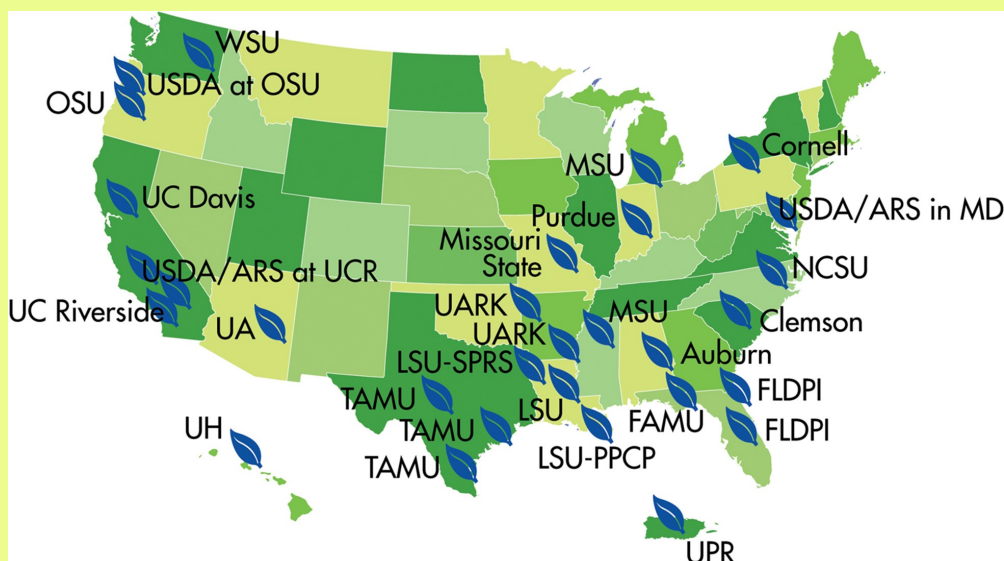
# National Clean Plant Network

NCPN Network News

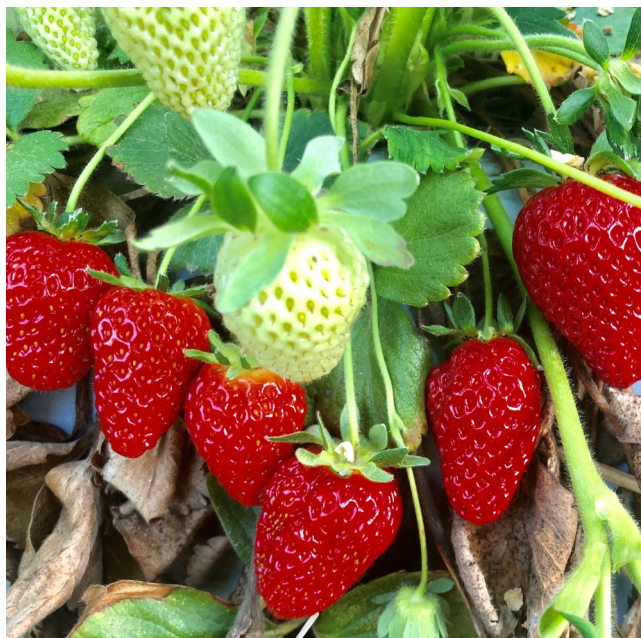
This issue of the NCPN Network News is devoted to providing a snapshot of the accomplishments of our centers, programs, and the Network as a whole. You might consider it our Annual Report, in infographic form!

## by the numbers

- 46 Programs
- 34 Centers
- 20 States
- 7 Specialty Crops



Since NCPN was established in 2008 with the formation of the Fruit Tree and Grape network groups, the program has expanded to include Hops, Berries, Citrus, Sweetpotato, and Roses. There are currently 7 specialty crops sharing research, best practices, funding, and other resources in the mission to protect U.S. agriculture from the spread of economically harmful plant pests and diseases. The Network is also engaging in a series of Special Initiatives such as Education/Outreach, Economics, and Quality Management. (Note: for the sake of simplicity in the graphic above, the term “Programs” includes stand-alone specialized labs and other satellite locations as well as locations for special initiatives; additionally, some University-based Centers may have more than a single program (e.g. multiple crops.)



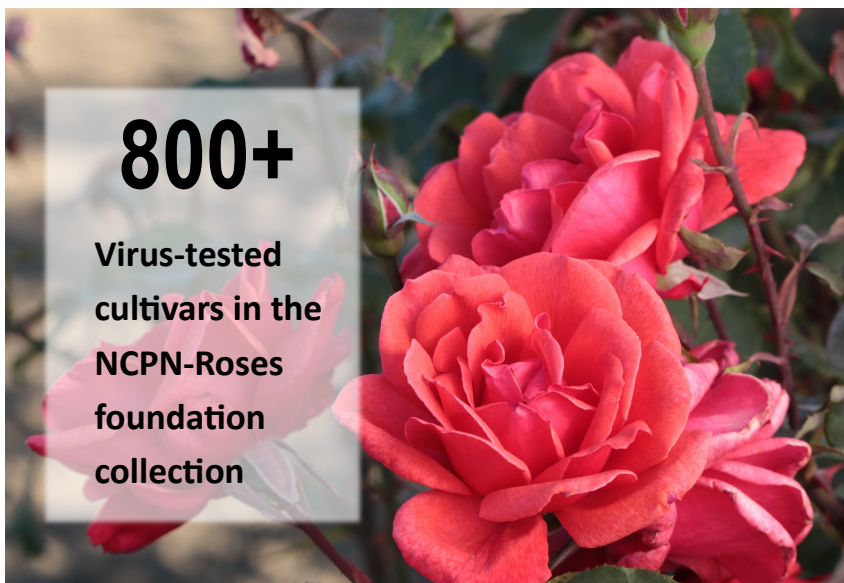
## 1 Clean strawberry plant

from the NCPN-Berries program is increased by nurseries over 2 to 3 years to produce as many as

# 2.5

million plants





## Protecting the Rose Industry

A clean rose is one that has been tested and found free (clean) of targeted, damaging viruses and other virus-like pathogens. Clean roses are key to more flowers, higher quality flowers, better rooting and vigor. NCPN-Rose centers provide clean, tested propagation material to rose nurseries and growers throughout the United States.

## Meeting the needs of Specialty Crop Growers Across the United States

**Fruit Trees:** More than 600,000 clean plant units distributed annually

**Grapes:** Value of virus-screening to CA North Coast winegrowers is \$22.5M per year

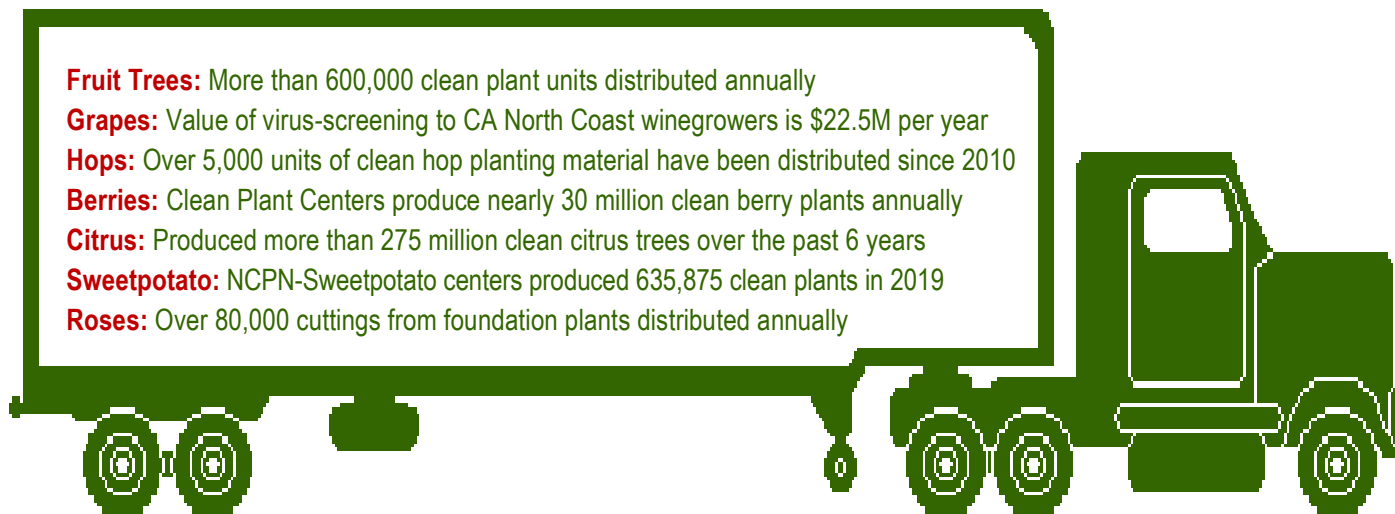
**Hops:** Over 5,000 units of clean hop planting material have been distributed since 2010

**Berries:** Clean Plant Centers produce nearly 30 million clean berry plants annually

**Citrus:** Produced more than 275 million clean citrus trees over the past 6 years

**Sweetpotato:** NCPN-Sweetpotato centers produced 635,875 clean plants in 2019

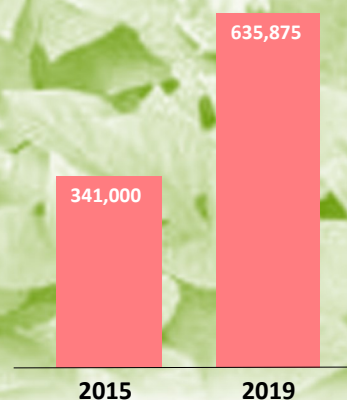
**Roses:** Over 80,000 cuttings from foundation plants distributed annually



Since joining NCPN in 2015, the quantity of virus-tested greenhouse plants produced has almost doubled at Sweetpotato Clean Plant Centers.



## Clean Sweetpotato Greenhouse Plants Produced





## NCPN-Hops doing our part to support the beer brewing industry!

public virus-tested hop accessions in the foundation collection, in protected screenhouses to prevent reinfection.

## NCPN is on the Cutting Edge of Diagnostics

**2** new end-point PR-PCR assays for a novel rose virus

**11** new RT-PCR assays for viruses infecting currants, strawberries, blueberries and blackberries

**15** new RT-PCR assays for viruses infecting grapevines

**18** new diagnostic RT-qPCR assays for viruses infecting Malus, Pyrus and Prunus

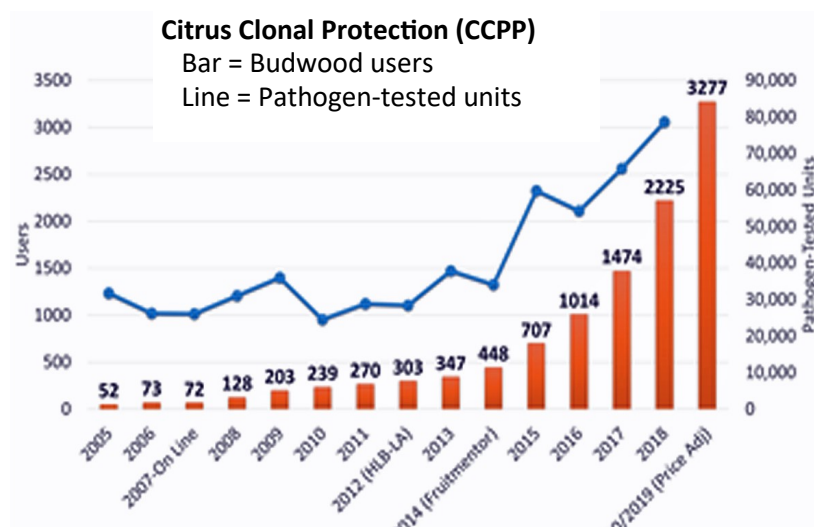
**25** qPCR assays and 5 multiplex qPCR assays to detect citrus pathogens




**650+** selections analyzed by high throughput sequencing

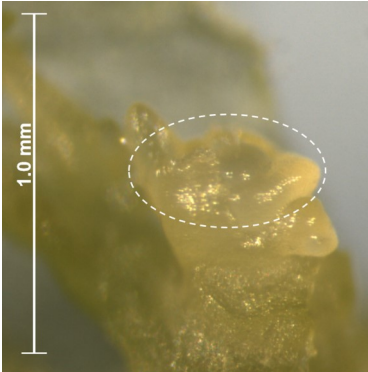
## Citrus Clonal Protection Program

The CCPP provides a safe mechanism for the introduction into California of citrus varieties from any citrus-growing area of the world for research, variety improvement, or for use by citrus enthusiasts and the commercial industry of the state.



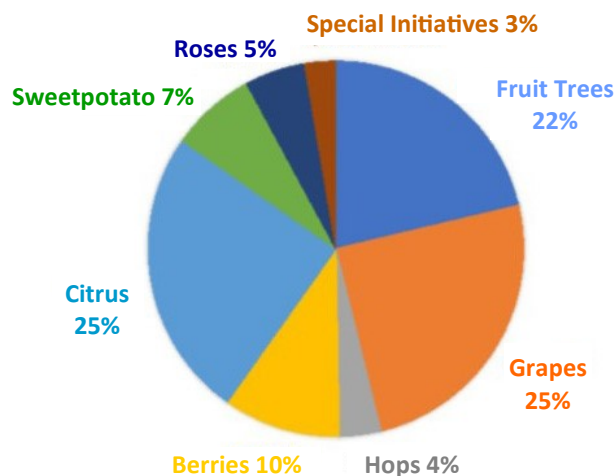


**NCPN-Grapes uses microshoot tip therapy to eliminate viruses from valuable plant cultivars.**



**0.2 to 0.5 mm**  
Size of microshoot tips  
**7 months**  
to grow into plantlets

### 2019 Cooperative Agreement Funding, By Crop



Since 2009, USDA has supported about 225 NCPN projects and provided close to \$58 million in funding.

NCPN is a network of clean plant centers with diagnostic and pathogen elimination services and blocks of pathogen-tested plant material in sites throughout the United States. In fiscal year 2020, universities, States, Federal agencies, and non-profit organizations in 16 States and Puerto Rico will carry out the selected projects. By working with these groups, USDA and its cooperators leverage and extend their abilities to protect, detect, and respond to plant pests and diseases at national, regional, and local levels.

# 900+

Virus-tested cultivars  
maintained in the  
**NCPN-Fruit Tree  
Foundation Collection**

