

# Importing European Cider Cultivars into the U.S.

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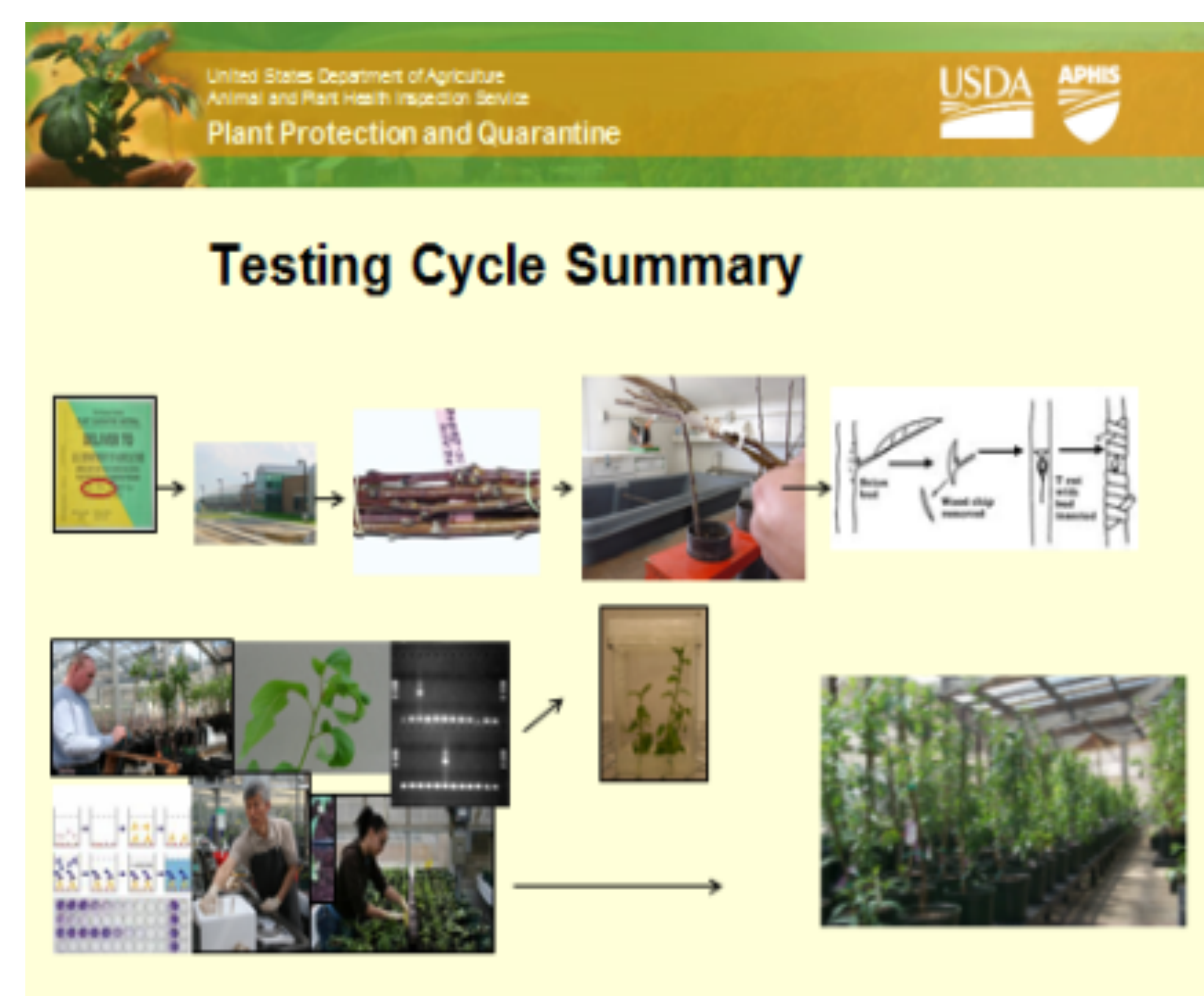
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## INTRODUCTION

The recent growth in the U.S. hard cider industry has created a tremendous amount of interest in European cider apple cultivars. While the juice from any apple cultivar can be fermented and made into hard cider, specialized cider apples are typically more tannic and/or acidic than culinary apples. Through a collaborative effort among land grant universities, the USDA-Plant Germplasm Quarantine Program (PGQP), and the USDA-Plant Genetics Resource Unit (PGRU), 25 Spanish and 21 English cider apple cultivars have recently been imported into the U.S.

Relatively few Spanish cider apple cultivars are currently available in the U.S. Spanish cider (or sidra) tends to be more acidic and acetic than English and French ciders. The imported Spanish cultivars will allow U.S. producers to explore new cider styles.

The English cultivars include 17 releases from the Long Ashton Research Station that are crosses of Dabinett or Michelin X James Grieve or Worcester Pearmain. These are referred to as “The Girls” and currently account for an estimated 20% of the cider apple acreage in the UK. Other imports include cultivars that are possibly not true to type in the U.S., such as Foxwhelp and Tremlett’s Bitter.



## US DEPARTMENT OF AGRICULTURE SERVICES

The Animal and Plant Health Inspection Service (APHIS) is responsible for protecting animal health, animal welfare, and plant health. Within APHIS is the PGQP. The PGQP safeguards U.S. agriculture and natural resources against the entry, establishment, and spread of economically and environmentally significant pests, and facilitates the safe trade of agricultural products.

The PGRU has the mission to acquire, maintain, characterize, and distribute plant genetic resources of selected fruit and vegetable crops, including apple, and to develop new precocious and productive apple rootstocks resistant to pests, diseases, and environmental stresses. The *Malus* (apple) germplasm repository is located in Geneva, NY. Currently, the PGRU holds over 300 apple cultivars that have been documented to be used for cider production.

## THE INTRODUCTION PROCESS

The quarantine period outlined below takes a minimum of four years. This includes two years of lab tests and two years of field tests. The timeframe increases if the material is infected with viruses, viroids, *Xylella fastidiosa*, and/or phytoplasmas.

1. Imported budwood accessions are bud grafted onto apple rootstocks.
2. Each accession undergoes two years of grafting tests, two years of molecular hybridization tests for four different viroids, two years of RT-PCR tests for *Apple chlorotic leafspot virus* (ACLV), *Apple stem grooving virus* (ASGV), *Apple stem pitting virus* (ASPV), as well as PCR tests for phytoplasmas and *Xylella fastidiosa*. If infected, plant material undergoes heat therapy and is then retested.
3. The material is then evaluated in the field for a minimum of two years and visually inspected for disease symptoms.

Plant material is released from quarantine when all of the above tests are negative. At that time, the PGRU in Geneva, NY will add these imported cider cultivars to their collection for dissemination to nurseries and individuals.

## IMPORTANCE OF USING THE USDA PLANT QUARANTINE PROGRAM

Importation of plants, plant parts, and seeds of some plant genera, including *Malus*, is prohibited by federal laws. The laws were enacted to prevent introduction of exotic plant pests that could endanger U.S. agriculture and the environment. The PGQP provides a legal route for obtaining foreign *Malus* species and cultivars.

Spanish Cultivars (Available for release starting in 2016)	English Cultivars (Available for release no sooner than 2020)
Blanquina	Amanda
Clara	Angela
Collaos	Betty
Cristalina	Debbie
Coloradona	Early Bird
De la Riega	Fiona
Durona de Tresali	Gilly
Marialena	Hastings
Ernestina	Helen's Apple
Limón Montés	Jane
Panquerina	Joanna
Pepa	Lizzy
Perico	Maggie
Peau de Chien	Prince William
Piel de Sapo	Three Counties
Prieta	Tina
Raxao	Vicky
Regona	Don's Seedling
Reineta	Foxwhelp, Broxwood
Repinaldo	Foxwhelp, Bulmer's
Sangre de Toro	Tremlett's Bitter
Solarina	
Teórica	
Verdialona	
Xuanina	

## FIELD TESTING

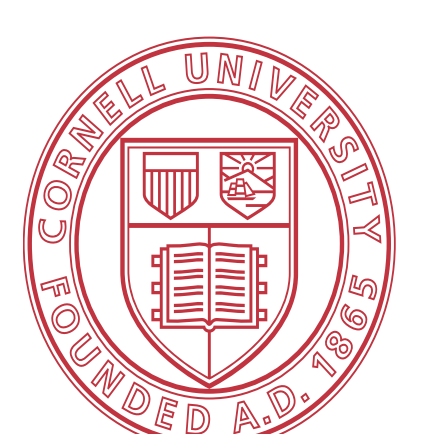
As they become available, Cornell University and Washington State University will establish replicated field trials to test the horticultural and cider making potential of these imported cider cultivars.

## WANT TO LEARN MORE?

USDA-APHIS-PGQP  
[www.aphis.usda.gov/wps/portal/aphis/ourfocus/planthealth](http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/planthealth)  
USDA-ARS-PGRU *Malus* Collection  
[www.ars.usda.gov/Main/docs.htm?docid=10013](http://www.ars.usda.gov/Main/docs.htm?docid=10013)  
Washington State University Hard Cider Website  
[ext100.wsu.edu/maritimefruit/hard-cider/](http://ext100.wsu.edu/maritimefruit/hard-cider/)

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