The Economic Effects of Pierce’s Disease in California: Preliminary Indications.

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Introduction

In 1989 a pest new to California, the glassy-winged sharpshooter, GWSS, was collected in Irvine, CA.

By the mid 1990s it became apparent that the GWSS was a more deadly vector of Xylella fastidiosa than were native sharpshooters.

*Xylella fastidiosa* causes Pierce's disease (PD) in grapes and has been endemic to California since the 19th century. However, because the GWSS is a more deadly vector of the bacterium, its establishment has led to an increase in both the severity and incidence of the disease in regions infested with GWSS.

Initial Economic Effects

When the association between the GWSS and PD was made, PD had been found with increasing frequency and little was known about effective control of GWSS.

Losses to grape growers were mainly from the removal of vines due to vine death or infection with PD.

In 1999 losses to grape growers were estimated to be $46 million.

Policy Response

By the late 1990s the GWSS had spread into the lower San Joaquin Valley and was threatening table, raisin and wine grape industries further north.

To prevent further spread of GWSS throughout the State a public containment program was adopted. The containment program has two parts:

Quarantine on the movement of host material including fruit and nursery stock from infested areas.

Treatment of GWSS in citrus in areas that produce both citrus and grapes to reduce GWSS populations before grapevines come out of dormancy in the spring.

Current Economic Effects

**Grape Growers**

Grape growers are now able to treat with imidacloprid to reduce infestations of GWSS. This has reduced the economic losses of GWSS and PD for grape growers as the cost of pest control is less than the cost of vine death

Because table grapes are field packed, table grape growers do not incur any costs to meet quarantine regulations.

Wine grape growers in quarantined areas do not incur additional costs if the grapes are processed within the quarantine zone. Grapes processed outside the quarantine area to need quarantine regulations.

**Citrus Growers**

Citrus growers are affected by the quarantine and containment program.

As part of the containment program citrus growers voluntarily treat their own groves for GWSS. Groves are typically treated once every three years with a fall treatment of Assail and a spring treatment of imidacloprid. Treatments are coordinated by a central agency so that the entire area can be treated during the same years.

Citrus grower expenses to control GWSS are reimbursed.

Fresh citrus that leaves a quarantine area must be inspected and treated if necessary.

Current Economic Effects

**Tax payers**

Tax payers bear the cost of the public program to contain the GWSS. Tax payers also bear the inspection and monitoring costs of the state quarantine, quarantine costs are incurred by grape growers.

In the Temecula Valley the application of Admire is being supplemented with annual sprays of Danitol in some areas. In addition the Temecula Valley has a drier climate than the San Joaquin Valley.

In order for growers to apply Admire when it can do the most good, a separate irrigation may be required. Total GWSS control costs are $98.50 an acre (4.6 lb ai/gal formulation) through the irrigation system. The cost of applying Admire Pro is currently about $50-$60 per acre.

The treatments with imidacloprid also provide some cost savings as the GWSS also controls the variegated grape leafhopper, grape skeletonizer, and is a suppressant of the grape vine mealybug. The cost savings by growers is $62, or about the same amount as the current costs to apply Admire Pro. No quarantine costs are incurred by grape growers.

With the area wide program, the net increase in costs of production is less than $5 per acre.

Market Effects

The southern San Joaquin Valley accounts for the largest share of grape production in California; however, the change in the costs of production is less than $5.00 an acre – an amount that would not be large enough to affect market prices.

On the other hand, the change in the costs of production in Southern California is about $30-$40 an acre. This is large enough to affect market prices; however, production as a share of total grape production in California is less than 3%, an amount too low to influence market prices.