

## American grape grower decreases crop loss and bird nuisance by 99.8% with lasers

<b>Location:</b>	Sonoma County, California, USA
<b>Application context:</b>	Vineyard
<b>Problem definition:</b>	Crop loss due to bird damage in the vineyard
<b>Pest bird species:</b>	Finches ( <i>Passerida</i> )
<b>Bird behavior:</b>	Foraging and perching
<b>Time of bird presence during the year:</b>	June - September
<b>Time of bird presence during the day:</b>	From dawn to dusk
<b>Number of birds before installation:</b>	1000s
<b>Number of birds after installation:</b>	2
<b>Birds reduction after the Autonomics have been installed:</b>	99.8%
<b>Laser projection area:</b>	21 acres
<b>In use since:</b>	May 2017
<b>Number of systems:</b>	4 x Agrilaser Autonomic 500

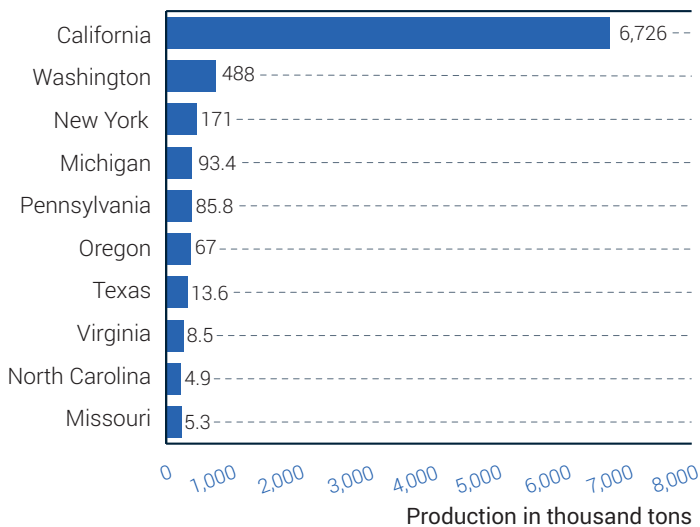


# Laser technology solves bird problem in wine grape industry

## Wine grape industry in the United States

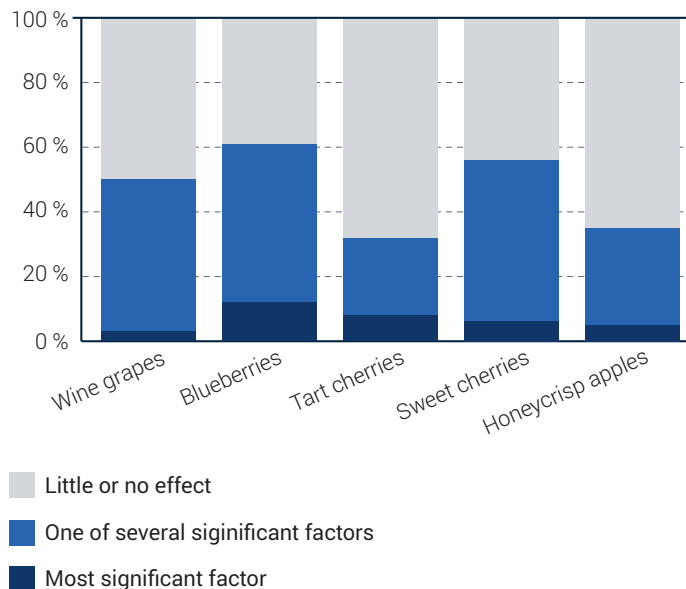
The United States wine grape industries contributed more than 162 billion US dollars annually to the American economy in 2007 and this number still keeps growing<sup>1</sup>. According to The National Association of American Wineries, grapes are the highest value fruit crop in the US<sup>2</sup>. California, Washington and New York are the top 3 states with the highest grape production level in 2016.<sup>3</sup>

## Grape production in the United States in 2016, by state



Despite the overall positive situation in the American grape industry, there is a significant and important problem which makes the grape growers suffer and lose millions of dollars - birds. Crop loss due to birds is a long-lasting, very costly and severe problem for many growers. The research "Crop Protection. Bird damage to select fruit crops: The cost of damage and the benefits of control in five states" says that bird damage is one of the significant factors influencing the profit of the farms in California.<sup>4</sup>

## Impact of bird damage on the profit of the farm



The table "Annual bird damage per state" from the same research demonstrates the annual bird damage in fruit production per acre and statewide. The highest bird damage cost per state is 49,099,613 US dollars in California from the researched five states.

## Annual bird damage per state

Bird damage in wine grapes (USD)		
	per acre	Statewide
California	100	49,099,613
Michigan	174	2,472,268
New York	93	3,452,595
Oregon	232	2,675,986
Washington	383	12,892,063

<sup>1</sup> U.S. Wine, Grapes and Grape Products Contribute 162 Billion US dollars to Economy (2007). Retrieved from: <https://www.wineinstitute.org/resources/pressroom/01172007>

<sup>2</sup> About the United States Wine and Grape Industry 2014. Retrieved from: <http://wineamerica.org/policy/by-the-numbers>

<sup>3</sup> Grape production in the United States in 2016, by state (in 1,000 tons) 2016. Retrieved from: <https://www.statista.com/statistics/193913/top-10-grape-producing-us-states/>

<sup>4</sup> A. Anderson, C.A. Lindell, K.M. Moxcey, W.F. Siemer, G.M. Linz, P.D. Curtis, J.E. Carroll, C.L. Burrows, J.R. Boulanger, K.M.M. Steensma, S.A. Shwiff (2013). Crop Protection. Bird damage to select fruit crops: The cost of damage and the benefits of control in five states, p. 106

### Bird species responsible for crop damage

The birds that are responsible for damage to wine grapes in the researched five states include European Starlings, American Robins and Wild Turkey.

Top 3 birds responsible for wine grape damage
European Starling ( <i>Sturnus vulgaris</i> )
American Robin ( <i>Turdus migratorius</i> )
Wild Turkey ( <i>Meleagris gallopavo</i> )

The data illustrates how severe the damage of birds to fruit industry and farming is. Bird damage to grapes is largely due to the inability of farmers to successfully repel birds, they are relying on inefficient bird deterrence methods.

### Current yield-loss due to bird damage in grape growing

Bird damage in wine grapes (%)	
California	2.9 %
Michigan	9.2 %
New York	5.6 %
Oregon	4.9 %
Washington	7.6 %

### Laser bird repellent at Griffin's Lair vineyard

Griffin's Lair Vineyard is located in the southernmost part of the Sonoma Coast AVA (American Viticultural Appellation), California, USA. The vineyard is owned and managed by Joan and Jim Griffin. Their main grape types are premium pinot noir and syrah.

Griffin's Lair Vineyard is committed to sustainable practices, environmentally and socially including improving the soil, streams, wildlife habitat, grasslands, and other natural resources on our property, investing in organic products and integrated pest management programs and respecting vineyard workers.

The vineyard's biggest pest problem was bird damage to grapes. Jim Griffin, Owner of Griffin's Lair, says that he spent more than 25,000 US dollars per year (which is 1,190 US dollars per acre) on netting and labor costs as bird control methods. Netting was very costly and required extra labor force. That was the reason why Jim went in search of a new more convenient and effective bird repellent. Meanwhile Jim's wife had read of Bird Control Group and was very excited about the automated laser bird repellents. She immediately told Jim to contact Bird Control Group to get informed more on the lasers.

Very quickly, Jim got 4 automated lasers installed on the vineyard. He is happy with the results - a 99.8% reduction in birds!



"We have tried many bird deterrent measures but most are difficult and lasers make it easier and very effective."

**Jim Griffin** - Owner of Griffin's Lair