

Nevada Department of Agriculture  
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AMS Agreement: 14-SCBGP-NV-0032

Final Performance Report

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**Project Title:** Best Practices Raspberry Production in a Nevada Hoop House

Project Summary:

Nevada specialty crop farmers are continuously looking for ways to gain fresh fruit and vegetable market share and to increase their customer satisfaction. One way that farmers approach this is to offer a full complement of fruits and vegetables. Since Nevada has a challenging growing environment for many specialty crop fruit varieties, specifically tree fruit, it is necessary to invest wisely in crops.

The purpose for this Specialty Crop Block Grant was to provide documentation and education to encourage Nevada farmers to consider including raspberries as part of their specialty crop plan, increasing the number of farmers growing raspberries in the state. The UNR Desert Farming Initiative grew raspberries over a period of three years to gain an understanding of raspberry varieties and growing methods. Also as part of the education plan, the project team developed an online training application which recommends what actions to take on a monthly basis to care for their raspberry plants and other cane varieties.

This information is important as it will help Nevada farmers (and another other farmers that have online access) to properly plan and care for their raspberry plants for best economic success.

Project Approach:

The Work Plan as outlined in the grant proposal has been completed with a few modifications that were approved in the Annual Reports.

Year 3 maintenance of the raspberries and data was collected on time. Below is a graph of the data in Year 3.

Date	Total Grams				Total Quantity			
	Blue	Yellow	Green	Orange	Blue	Yellow	Green	Orange
30-Jun	3	8	28	0	1	5	9	0
5-Jul	22	30	28	16	8	12	11	9
8-Jul	8	24	42	66	4	11	21	22
10-Jul	62	38	110	80	31	19	51	30
13-Jul	126	92	202	130	53	46	95	54
17-Jul	268	94	348	318	133	54	184	159
21-Jul	268	176	332	330	181	118	184	188
25-Jul	180	158	456	414	140	101	284	241
28-Jul	314	148	640	538	214	91	398	336
2-Aug	266	216	508	528	162	117	302	320
8-Aug	646	288	996	946	398	185	554	612
11-Aug	542	276	612	422	321	485	351	276
15-Aug	788	366	844	462	434	225	494	267
18-Aug	700	334	750	398	431	175	431	241
23-Aug	856	480	772	600	542	313	772	385
29-Aug	430	338	550	286	318	214	345	190
1-Sep	392	484	374	238	307	327	337	227
5-Sep	350	570	340	302	279	348	271	147
8-Sep	584	592	612	376	409	347	325	224
12-Sep	342	740	580	288	273	473	362	210
15-Sep	302	500	316	166	204	301	178	113
18-Sep	364	588	454	286	243	367	284	192

Notes: Blue=Heritage, Green=Joan J, Orange=Polana, Yellow=DoubleGold

The data from Year 2 and Year 3 were calculated to show the performance of each berry variety.

Year	Total Quantity		Average Gram	
	2016	2017	2016	2017
Joan J	2783	6243	1.23	1.79
Heritage	2718	5086	1.24	1.72
Polana	2097	4443	1.19	1.77
Double Gold	1523	4334	1.08	1.68

As you can see from the data totals, Joan J was the best yielding berry variety. From Year 2 to Year 3, the berries tripled or doubled in yield depending on the berry. The berry weights also increased by almost 0.5g.

This information helps us in working with Nevada farmers on raspberry production, but also gives us an insight on which berries yield better in a Nevada hoop house.

#### Conclusion:

At the beginning of the project in 2014, there were 6 berry producers in the state of Nevada. As of September 2017, there are 14 berry producers in the state of Nevada. Four of the berry producers listed by the Nevada Department of Agriculture are elementary schools so we have taken them out of the total count (18) as we are assuming their berry plants are for education and not production purposes. Our goal was to double the amount of farmers growing berries in the state and we have accomplished that goal.

Our second measurable outcome was to produce a best practices document to be distributed to Nevada farmers. Rather than produce a paper document, the product team developed a web application so that it would be widely available to Nevada farmers and other berry growers as well. The Raspberry and Blackberry Maintenance Guide is available on our website, [www.highdesertfarming.org/projects](http://www.highdesertfarming.org/projects). It is a step-by-step guide on raspberry production separated by variety and month. By selecting a specific month, the web application provides farmers with a suggestion on what to do to maintain health raspberry plants.

All partners named in this grant served a significant role in the grant outcome. The Nevada Department of Agriculture and Nevada Small Business Development Center provided administrative and industry support. The two farmers named in the grant, Lattin Farms and Jacobs Berry Farm, provided invaluable insight to their own berry growing operations so that we could include blackberries as part of the web application guide. The last partner, Urban Roots, did not participate as planned because of internal issues with that organization in Year 1. I requested that funds allocated to Urban Roots be shifted to UNR interns for Years 2 and 3. There was very little participation by Urban Roots in this grant.

#### Goals and Outcomes Achieved:

The project team planted raspberries inside a hoop house, measured growth and created a working document all in an effort to further support the increase of berry production in Nevada.

The number of farmers in Nevada growing cane berries has more than doubled in the three years of this grant project (from 6 farmers to 14 farmers). Although it is difficult to tell whether the increase is a direct result of the grant project, the project manager and two farm partners have been talking to producers around Nevada about the details of this project and the production methods for growing raspberries, both in hoop houses and uncovered.

The project team created an online best practices document that is interactive to the type of berry grown, flouricane vs. primocane, and the month of the year. This online document was created in favor of a paper document so that information could be updated as necessary and the document could reach a wider audience.

The project manager and one of the project farmers will present the best practices document and an overview of the project at the Nevada Small Farms Conference on February 2<sup>nd</sup> and 3<sup>rd</sup>, 2018.

#### Beneficiaries:

The beneficiaries of this project are specialty crop farmers in Nevada looking to expand the fruit products offered to their customers. They are not beginning farmers, but those with existing assets and looking to expand and/or diversify.

University of Nevada, Reno agriculture students that worked as an intern on this project also benefited as they were able to take ownership of this project and learn both agriculture and data collection techniques that will be useful in agriculture careers.

#### Lessons Learned:

The project team learned many lessons on the specifics of raspberry production by collaborating with the project farmers. All members of the project employed new techniques

learned from each other to increase the berry yield and decrease the instance of weeds and invasive pests. For example, the project team began removing leaves on the bottom 18 inches of the canes to remove the habitat for spider mites.

The project team will continue to share this information in a collaborative manner with other farmers in the state.

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