## Introduction

- Only 13.4% of plants sold in the Western US are reported to be “native”, and many of these plants may not be considered true natives; many native plants available in the horticultural market have been modified for commercial performance.
- While some native plants may be bred for performance in retail containers, native cultivars, or “natives”, can be bred or selected for ornamental qualities, such as changes in floral display and architecture, or for resistant traits (e.g. drought, disease).
- Thus far, research seeking to evaluate the value of native cultivars compared to wild type natives to pollinators has only yielded mixed results, highlighting the need for further research.
- Here, we report on two years (2020 and 2021) of research comparing native bee visitation to 7 species of Oregon native plants and one to three associated native cultivars.

## Methods

- Five replicates (1m² plots) of each plant type were established in an experimental garden at Oak Creek Center for Urban Horticulture in Corvallis, OR in 2019.
- When plots reached 25% bloom coverage, 5-minute observation periods of insect visitors were conducted and plots were vacuum-sampled using a modified hand vacuum.
- Collected specimens are identified to the lowest taxonomic level, and field-collected specimen are identified to morphospecies groups (e.g. Bombus species = Bumble bees, Agapostemon species = Green Bees, Halictids and Andrenids = black bees, etc).
- Here, we report only on observation counts of native bees. Thus, the non-native honeybee (Apis mellifera) and European wool-carder bee are excluded from our analyses.
- A negative binomial general linear model (NBGLM) was used to determine whether or not native status (native or cultivar) and plant type (individuals within species groups) were significant predictors of native bee visitation for the years 2020 and 2021.
- A post-hoc Tukey test was used to identify which cultivars within species groups that had significantly different native bee visitation than the wild type.

## Results

### Is there a difference in native bee visitation to native plants and their cultivars?

- Our preliminary findings suggest that native plants and cultivars do not always attract the same abundance of native bees.
- Native status was found to be a highly significant predictor of native bee visitation in 2020 and 2021:
  - After accounting for plant species, we found native plants to have 2.94 times the mean total number of foraging native bees as native cultivars (NBGLMM: p < 0.0001, 95% CI: 2.07 to 4.20).
  - Significant differences in mean total visitation between natives and cultivars occurred in 3/7 plant groups (Figure 1).

## Figure 2. Mean native bee visitation to 7 Oregon native plants and 1-3 native cultivars.

Mean abundance of native bee visitation was calculated from two seasons (2020 and 2021) of field observations. Calculations only include observations of foraging native bees, thus the non-native honeybee (Apis mellifera) and the European Wool-Carrier Bee (Anthidiellum manicatum) have been excluded from these figures. Any n/a values are the result of either insufficient bloom or the addition of a new cultivar in 2021. Comparisons of visitation between natives and cultivars were conducted using a post-hoc Tukey test. Results in the comparison tables are as follows: Green = Preference for Native Purple = No Preference Yellow = Preference for Nativar

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