

SOUTH COAST GROWER NEWS

Oregon State | **Extension Service**
UNIVERSITY | **Coos County**

Cranberry Watch

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Inside this issue:

Vole Control	2
Insect Monitoring	2
New Publications	2
Cranberry Farm Science Review	2
Pollination in Cranberries	3-5
Upcoming Events	Back

The new growing season is starting, so here are a few practices to keep in mind for the next few months.

- **Blackheaded Fireworm**—in general, scouting for fireworm should begin in late April, with the first hatch of insects appearing in early May. Monitoring should start soon. You can use the tried and true controls such as Diazinon, Entrust, Intrepid or Confirm. New chemistries which you may wish to try include Assail, Avaunt or Delegate. Timing is often very important when using newer chemistries as they target certain life stages, so be sure to read the label directions carefully—or contact me for more information.

- **Girdler and Fireworm**—early May is a good time to install pheromone traps for cranberry girdler and fireworm monitoring. (see page 2 for Ocean Spray insect monitoring). Traps should be monitored twice a week in the afternoons. Treatment options should occur after peak flight numbers are seen. Timing of treatment is dependent on the treatment applied.

- **Black Vine Weevil**—Monitor for weevil May through June. Look for the distinctive adult by sweep netting at night; look on leaves for notching, or roll back vines in suspected areas if looking for the larvae or nymphs. Control of adults can still be achieved using Cryolite bait, but Kim Patten

in Washington has gotten good control of adult BVW using Avaunt and Assail. He recommends rotating the two pesticides. For larvae control use Admire or parasitic nematodes, Nemasys H or Nemasys L.

- **Lophodermium Twig Blight**—monitor now. Twig Blight occurs on new growth (1-year old wood). Look for small black spots—fungal spores—on lower leaf surfaces. As the season progresses, the spores will become a very distinctive football shape with a center ridge. Control is achieved through the protection of new growth as fungal spores mature. Timing of spore maturity varies year to year. Various fungicides may be used to control this disease.

- **Yellow Vine**—once again this year yellow vines are appearing. If yellow vines were first noticed after last year's harvest, or over the winter, the problem may be a temporary nutrient deficiency, and if all goes well the yellowing will go away with active growth and fertilization this spring. If yellow vines are a year-round persistent problem it may be a sign of some other problem such as phytophthora root rot. If you are concerned or have questions, please contact me.



Weeds

Azolla filiculoides (water fern, water moss, Pacific mosquito fern). This is an extremely common floating aquatic weed seen locally in the winter and spring months. It can quickly cover water sources. It is generally green in color, but if stressed - and during the winter - it is colored red. The leaves are very small, and if looked at closely, will resemble fern fronds. It is most abundant in still waters, and often disappears in the summer as it prefers cooler weather.



Vole Control

Voles, meadow mice, or bog rats—whatever you choose to call them—can be extremely damaging to many crops in the area, including cranberries.

Some important vole facts:

- They can begin breeding at 3 weeks of age.
- Bear up to 13 litters per year—4-8 born per litter!



Identifying damage: In all crops and area look for trails or run and holes flat to the ground. In cranberries, watch for dead vines. Vole damaged cranberries are nipped across the vine diagonally. In young trees look for small chew marks from the ground to about 5 inches up the trunk.

Control: Voles need thick overhead grassy coverage to protect them from predators. If voles are a problem, your first step should

be to keep any grass mowed low—especially around the base of young trees.

Encourage owls and hawks, the major predators to voles. Leave snags or put up perch poles. One perch pole per acre should provide enough hunting sites for good vole control, as long as grass cover is kept low.

Poison baits. There are numerous commercial baits available. Many are anti-coagulants, which cause internal bleeding, but there are others. Baits should be placed in bait stations or boxes where children, pets, or other non-target animals cannot access them.

More information on voles or other nuisance may be found through the OSU Extension Service website in EC 1579, Living with Nuisance Wildlife, or EC 1256, Controlling Vole Damage to Conifer Seedlings.

Cranberry Insect Monitoring

Once again Ocean Spray will be offering insect monitoring services of cranberry girdler and fireworm for any interested cranberry growers. The price is based on the number of sets of traps (a set is 1 girdler trap and 1 fireworm trap) placed on the

farm. In 2007, the price was \$60.00 for the 1st set and \$25.00 for each additional set. The price may change this year. To sign up for the service or for further information, please contact Sallee Belonga at the Bandon Ocean Spray Facility, (541) 347-2446.

New Extension Publications



EM-8975-E. Grapevine Growth Distortions; A Guide to Identifying Symptoms. New this month and available through the Extension offices or online at <http://extension.oregonstate.edu/catalog/pdf/em/em8975-e.pdf>. This publication discusses and shows photos of grapevine growth distortions due to pests, diseases, frost, herbicide damage, nutrient deficiencies, and other problems.

EM 8413-E, 2009 Pest Management Guide for Wine Grapes in Oregon. Available only online at <http://extension.oregonstate.edu/catalog/html/EM/EM8413-E>

EC 1513-E, Yesterday's Orchard, Today's Home: Legacy Pesticides on Former Orchards. Available on-line at <http://extension.oregonstate.edu/catalog/pdf/EC/EC1513-E.pdf>

Cranberry Farm Science Review

The Cranberry Farm Science Review (Field Day) is currently scheduled for early August, 2009. We are looking for one or two farm sites, preferably in the Bandon area, to visit. Sites must be large enough to support bus

and small vehicle traffic. If you are interested in having this event at your farm, please contact me, Linda White, at (541) 572-5263 x285. Thanks for your support!

Pollination in Cranberries on the South Oregon Coast: Honeybees and Native Bees

Melissa McKenney, Sujaya Rao and William P. Stephen

Many cranberry growers on the Oregon coast are well aware that good pollination is necessary for quality fruit set. Multiple visits to the flower deliver more pollen, which can increase the percentage fruit set, number of seeds per berry, and mature berry weight. The better a bee is at delivering pollen to the flower, the fewer the number of visits required for adequate pollination. Typically growers rent hives of the European honeybee for cranberry pollination. However, honeybees have exhibited a general preference for lotus, gorse, other weeds and native plants over cranberry flowers. As a result, growers must bring in enough hives to saturate the surrounding area so that at least some of the honeybees will have no choice but to forage in cranberry beds. In addition, honeybees forage primarily in fair weather. Multiple studies have shown (and many people have observed) that honeybees will retreat to their hives once it begins to rain. Often, they will retreat even when the skies become overcast, which is not ideal behavior for working in stormy coastal weather. Further, with the recent concerns about Colony Collapse Disorder, attack by mites and other diseases, the supply of available hives has decreased. This shortage brings to light the need for an alternate pollinator—a native species that is not susceptible to the ills of honeybees.

In the Pacific Northwest, there are over 200 species of native bees. Those species native to Oregon are acclimated to Oregon weather. Several species of bumblebees begin foraging hours before honeybees are active, and cease foraging at dusk when the honeybees have already been inactive for an hour or two. The advantages of having bees forage longer hours are obvious—the more time they spend foraging, the more flowers they will pollinate. In addition, Oregon's native bee species are often sighted foraging when it is drizzling while the warm-weather preferring honeybees are in their hives.

Currently, little is known about the number and diversity of bee species present on the southern Oregon coast. This information is required for determining whether a better pollinator than honey bees is available for cranberries. By determining which species are present during bloom it will be possible to select a species that flies during bloom, and one that is also loyal to cranberries.

Methods

Sampling for native bees: In 2007, blue vane traps (Figure 1) were set out in four farms on the south coast from Bandon to Sixes. The four farms were surrounded by habitats ranging from pastures to woodlands. The traps are extremely attractive to bees, making them good sampling devices. A total of 8 traps, 2 at each of the four sites, were set up. At each site, one trap was set up between two cranberry beds while the other was set up at the border of one of the beds to maximize capture of bees foraging in the beds. The traps were set up at dawn and taken down at dusk. Sampling was initiated just prior to bloom in mid-May and continued until late July. The bees were transported to the lab and preserved by freezing. Each bee was pinned, labeled and identified.

Estimating the abundance of bumble bees foraging on cranberry flowers: Visual observations were made of bumble bees foraging on cranberry flowers. The number of bumblebees belonging to each species observed during 2-minutes while walking up and down the same patch of a cranberry bed was recorded. Bumble bee species differ in color patterns hence it was possible to determine the identity of the bees on the flowers.



Figure 1. Blue vane trap used to sample bees in and around cranberry beds.

Results

Sampling for native bees: The traps provided information on which species were present in and around cranberry beds. Over the seven sampling days, 545 specimens were collected during cranberry bloom (Figure 2). This included bees belonging to four families, thirteen genera and over twenty-six species. *Apis*, the European honeybee, was less abundant than the genera *Agapostemon* (green metallic sweat bees), *Bombus* (bumblebees), *Evyllaesus* (small black bees) and *Melissodes* (long-horned bees). These four appear to be promising for cranberry pollination considering their large presence near the beds. However, *Melissodes* only occurred in large numbers after bloom. The other three species reached maximum populations during bloom, and hence these are likely candidates for domestication.

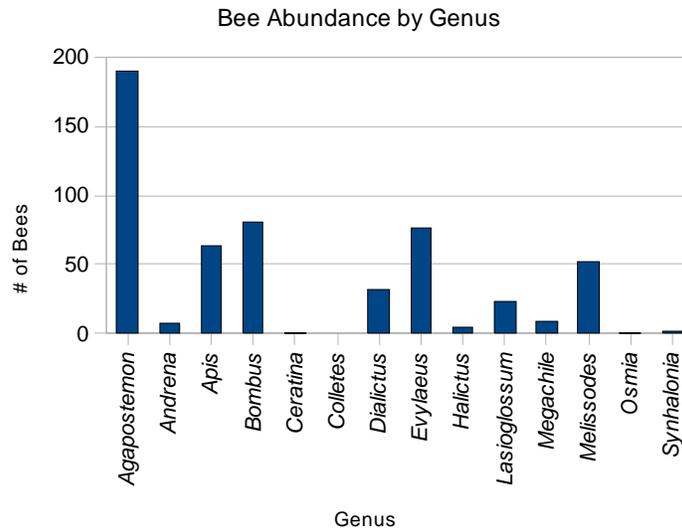


Figure 2. Number of native bees belonging to various genera collected in 2008.

Two species of *Agapostemon*, *A. virescens* and *A. texanus/angelicus* were collected but the latter species was the dominant species. It was not possible to separate the species belonging to *Evyllaesus*. While five species of bumble bees were collected, the two closely related species, *B. caliginosus* and *B. vosnesenskii*, were collected in much higher numbers compared to the remaining 3 species (Figure 3). Of the three genera that were abundant in the traps *Bombus* has the greatest potential for domestication since two species of bumble bees that are present in other parts of the world have been domesticated.

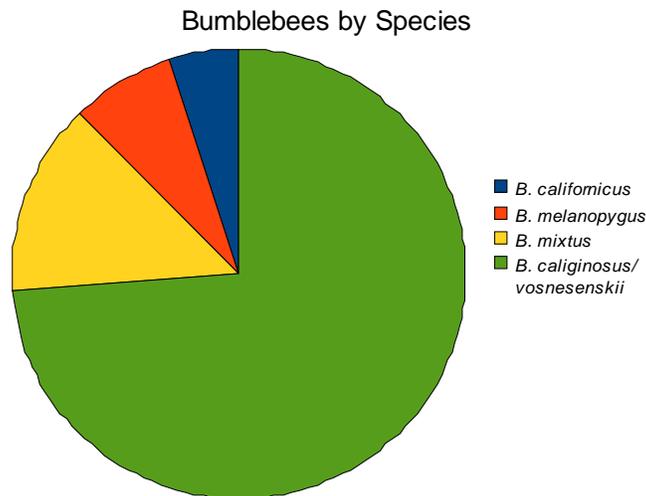


Figure 3. Relative abundance of bumble bee species collected in the traps.

Estimating the abundance of native bees foraging on cranberry flowers: During visual observations, four genera / species of bees were recorded foraging on the flowers (Figure 4). These varied in the periods when they were most abundant. On many days, the bumblebees were observed foraging as early as 8:30 am, while the honeybees did not increase in numbers until 10:30 am or past noon. The number of honeybees outnumbered bumblebees 10:1 on warm days and in the afternoon. It is possible that when they are abundant, honey bees force bumblebees to forage elsewhere.

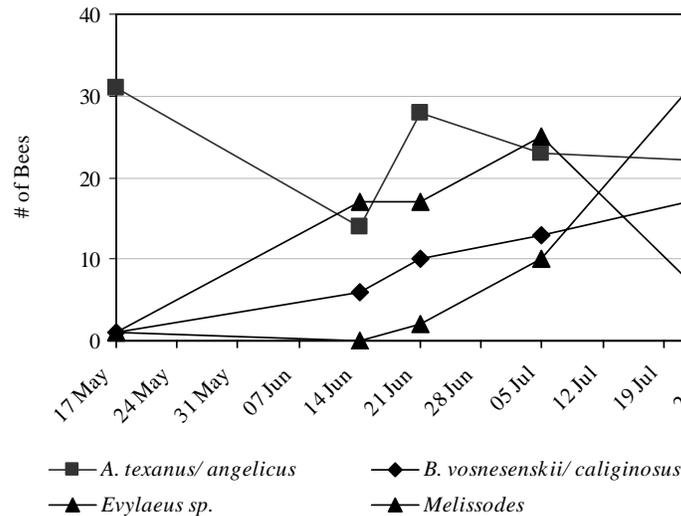


Figure 4. Abundance of native bees observed foraging on cranberry flowers throughout bloom.

To compare pollen collection between honey bees and bumble bees, 58 bees were collected. After chilling them in a cooler, the pollen was removed and the bees released. The pollen will be weighed and examined to determine what percentage of each pollen ball consists of cranberry pollen.

Research on native been diversity, abundance and foraging in cranberry beds will be repeated in 2009 to determine potential year to year variation, if any.

The research was supported by the Oregon Cranberry Growers' Association. If you have any questions, comments or if are interested in being part of the study, please contact Linda White (linda.white@oregonstate.edu) or Melissa McKenney (mckennem@onid.orst.edu).

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Keeping a current mailing list is an on-going project, so if you know someone who has not received this newsletter, and would like to, please contact me or Kim Phillips, so that we may add to our mailing list.





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Upcoming Events and Workshops

April 22, 2009 2:30pm-4:30pm	Forestry Short Course—Management Planning/Sources of Assistance Coos County Extension Office, Myrtle Point
April 23, 2009 2:30pm-4:30pm	Forestry Short Course—Management Planning/Sources of Assistance Curry County Extension Office, Gold Beach
May 6, 2009 2:30pm-4:30pm	Tree Biology and Silviculture Coos County Extension Office, Myrtle Point
May 7, 2009 2:30pm-4:30pm	Tree Biology and Silviculture Curry County Extension Office, Gold Beach
August 6, 2009	Cranberry Farm Science Review Bandon, OR

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