Urban Ag Workshop: Production Issues for Urban Farms **April 14, 2018**

Supporting crop pollinators on urban farms **Katharina Ullmann, UC Davis**

Bee diversity:

- The European honey bee (*Apis mellifera*) is one of ~20,000 species of bees world wide
- There are ~3,600 species of in the US and Canada; ~1,600 bee species are found California
- Some bees, like honey bees (*A. mellifera*), are social, others, like the mason bee, *Osmia lignaria*, are solitary
- Honey bees can be kept for pollination and honey, but care should be taken to manage them carefully for the Varroa mite and other pests and diseases
- Native bees can be better pollinators than honey bees and can also make honey bees more efficient pollinators

Bees need:

- Food - diverse pollen and nectar
- Shelter - places to nest protected from pesticides
- Protection from pesticides – including seed coatings of systemic pesticides
- Honey bees also need access to water and mason bees need access to mud

Resources to support bees and crop pollination on California urban farms

Protecting pollinators and natural enemies (UC IPM)

- http://ipm.ucanr.edu/mitigation/protect_beneficials.html

Honey beekeeping workshops (Nino Lab, UC Davis)

- https://elninobeelab.ucdavis.edu/extension.html

Bee Gardening Resources (UC Davis Haagen-Dazs Honey Bee Garden)

- https://beegarden.ucdavis.edu/BeeGardeningResources

UC Berkeley Urban Bee Lab (Frankie Lab, UC Berkeley)

- http://www.helpabee.org/

Farming for Bees (Xerces Society for Invertebrate Conservation)

- https://xerces.org/guidelines-farming-for-bees/

Twenty-Five Recommended Low-Water Bee Plants for the Sacramento Region

Christine Casey, Häagen-Dazs Honey Bee Haven, UC Davis Department of Entomology and Nematology

Plant and approximate bloom period[1]		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Germander (*Teucrium fruticans*)	**N**	x	x	x								x	x
Rosemary (*Rosmarinus officinalis*)[2]	**N**	x	x	x								x	x
Manzanita (*Arctostaphylos* spp.)*[2]	**N**	x	x										x
California poppy (*Eschscholzia californica*)*	**P**	x	x	x	x								
Ceanothus (*Ceanothus* spp.)*[2]	**P**	x	x	x	x	x	x						
Redbud (*Cercis occidentalis*)*[3]	**N**		x										
Phacelia (*Phacelia* spp.)*	**N P**		x	x	x								
Brandegee's sage (*Salvia brandegeei*)*	**N**		x	x	x	x							
Lavender (*Lavandula* spp.)[2]	**N**		x	x	x	x	x	x	x	x			
Mallow (*Malacothamnus* and *Sphaeralcea* spp.)*	**N P**		x	x	x	x	x	x	x	x			
Catmint hybrids (*Nepeta* x *faassenii* cultivars)	**N**		x	x	x	x	x	x	x	x	x		
Cape balsam (*Bulbine frutescens*)	**N P**		x	x	x	x	x	x	x	x	x	x	
Foothill penstemon (*Penstemon heterophyllus*)*	**N P**			x	x	x	x						
Autumn sage, little-leaved sage, and their hybrids (*Salvia greggii, Salvia microphylla, Salvia* x *jamensis)*[2]	**N**			x	x	x	x	x	x	x	x		
Blanketflower (*Gaillardia* x *grandiflora*)	**N P**			x	x	x	x	x	x	x	x	x	
Coffeeberry (*Frangula californica*)*[2]	**N**				x								
Toyon (*Heteromeles arbutifolia*)*	**N P**					x							
Cleveland sage (*Salvia clevelandii*)*	**N**					x	x	x	x	x	x		
Wall germander (*Teucrium chamaedrys*)	**N**					x	x	x	x	x	x		
California buckwheat (*Eriogonum fasciculatum*)*	**N**						x	x	x	x	x		
Gum plant (*Grindelia camporum*)*[4]	**N P**						x	x	x	x	x		
Russian sage (*Perovskia atriplicifolia*)[2]	**N**						x	x	x	x	x		
California fuchsia (*Epilobium canum*)*[2]	**N**						x	x	x	x	x	x	
Texas ranger (*Leucophyllum frutescens*)	**N**							x	x	x	x		
Mexican sage (*Salvia leucantha*)	**N**							x	x	x	x	x	

*=California native [1]N=nectar source; P=pollen source. [2]Many cultivars available; all used by bees

[3]Foliage used by leafcutter bees for nesting material [4]Gummy sap a potential source o

source:https://beegarden.ucdavis.edu/wp-content/uploads/2017/02/Twenty-five-low-water-bee-plants.pdf.