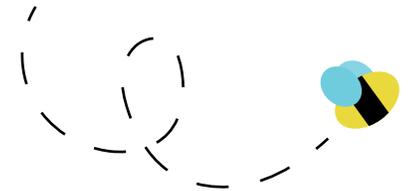


Pesticides and Their Impact

Pesticides pose unacceptable hazards to pollinators and their habitats, and they even pose risks to children and pets. Chemicals used to kill fungi, bacteria, insects, plant diseases, snails, slugs or weeds are known to adversely impact habitats and food supplies of pollinators (1). They also negatively impact the environment by polluting our waterways and groundwater resources. Pesticides should be used as a last-case scenario when maintaining a healthy garden, landscape or open space. Here's how you can reduce pesticide use while benefiting your yard, pollinators and the environment:



1. Reduce pesticide use or go pesticide free.

- Healthy plants and native plants are less susceptible to pests like weeds and harmful organisms. With fewer weeds and other pests living in your yard, you can reduce pesticide and chemical use to maintain a healthy yard. Weeds, pests and diseases are usually the result of poor growing conditions and unhealthy plants, not the cause of them. (2)
 - i. Select disease- and pest-resistant plant varieties.
- Consider using an integrated pest management approach, which is an alternative to using only chemical pest controls. Check out our Integrated Pest Management document for more information.
- Incorporate simple, low-cost pest control methods that do not involve pesticides, such as: (2)
 - ii. Removing weeds by pulling or hoeing.
 - iii. Covering planting areas with 2 to 3 inches of mulch to prevent weed germination.
 - iv. Removing pest-infested plant residue in the fall.

2. If using pesticides, choose the most targeted, reduced-risk product available. (3)

- Choose products that are least toxic to bees and other pollinators.



3. Avoid systemic insecticides and neonicotinoid pesticides.

- Neonicotinoid insecticides are the most widely used class of insecticides in the world. These chemicals are very toxic to pollinators, other beneficial insects and aquatic invertebrates.
- Their widespread use, combined with their water solubility, means they are often found in water and soil samples throughout the country. (4)
- Systemic insecticides have received significant attention for their potential role in pollinator declines. Systemic insecticides are absorbed by plants as they grow, and the chemicals are then distributed throughout plant tissues and are sometimes present in pollen and nectar. (5)
- When purchasing plants and landscaping materials, make sure the seeds or plants have not been pre-treated with these chemicals.

Resources Used in This Document:

1) Resolution Supporting East Lansing Being a Pollinator Friendly Community, City of East Lansing
https://eastlansing.granicus.com/MetaViewer.php?view_id=2&event_id=1853&meta_id=79918

2) Controlling Garden Pests, Washtenaw County
<https://www.a2gov.org/departments/systems-planning/planning-areas/water-resources/Documents/IPM-ControllingGardenPests.pdf>

3) Smarter Pest Management: Pollinator Protection for Cities and Campuses, Xerces Society for Invertebrate Conservation
https://xerces.org/sites/default/files/publications/19-054_Poll_Protection_Cities_Campuses_web.pdf

4) Understanding Neonicotinoids, Xerces Society for Invertebrate Conservation
<https://www.xerces.org/pesticides/understanding-neonicotinoids>

5) Pollinator Plants: Great Lakes Region, Xerces Society for Invertebrate Conservation
<https://xerces.org/publications/plant-lists/pollinator-plants-great-lakes-region>

