INSECTICIDES IN THE ENVIRONMENT

Non-Target Effects

- **Insecticides are designed to affect target insects that are pests, nuisances, or vectors. However, in some cases, insecticides can affect non-target insects.**
- **Non-target insects are any insects that are unintentionally exposed to insecticides during applications targeting insect pests. This can include beneficial insects, such as pollinators, biological control agents, decomposers, and insects used for food or feed, among others.**

Effects on pollinators

- Insecticides can harm pollinator insects, such as butterflies, bees, flies, and beetles.
- Pollinators may be exposed to insecticides in numerous ways, including:

- **Direct contact**: When the insecticide lands directly on pollinators

- **Residual contact**: When the pollinators land on surfaces that have been treated with insecticides.

Effects on biological control insects

- Insecticides can harm beneficial insects that naturally control insect pests (natural enemies)
- When insecticide applications targeting pests also kill natural enemies, there is a risk that the pest will resurge at even greater levels, since no natural control will occur.
- Some examples of natural enemies include lady beetles, lacewings, parasitic wasps, and flower flies.

What can we do to minimize non-target effects?

- Read and follow the insecticide label before you purchase a product, before you mix it, and before you apply it.
- Dispose insecticides as recommended in the pesticide label
- Do not spray more than the label recommends
- Clean spills immediately
- If possible, avoid applying insecticides at times when pollinators are most active. For example, butterflies and bees are usually more active during the day.
- Avoid spraying flowering plants, since insecticide drift can contaminate pollen and nectar that pollinators may be exposed to.
- Consider implementing an integrated pest management program which uses biological, cultural, and mechanical control against pests. Some examples include the use of barriers to protect animals from biting insects, habitat modification to reduce areas where biting insects develop, and trapping of biting insects.

Effects on decomposers

- Some insecticides can harm beneficial insects that are decomposers.
- Decomposer insects are important because they help to transform organic residues into useful organic matter. For example, dung beetles are important decomposers of animal waste.
- Decreases in decomposers have been associated to lower availability of nutrients in soils that are necessary for plant growth.

Would you like more information? Do you have any questions?

Contact us, and stay connected

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