

Controlling Rose Pests in the Future



Don Myers, PhD
October 23, 2015



Rose Pests 2015

- Pests (diseases/insects) always seem to plague roses.
- In the South, black spot and chilli thrips are concerns. Chilli thrips have been recently discovered in North Carolina in several areas! Midge is important in the north. New races of black spot appear...
- Count on new and expanding problems, e.g. rose rosette...epidemic in some areas of the south (Tennessee).

Are roses really that easy to grow?

How do we control rose pests in 2015?

- Do it yourself (most common)/lawncare companies (some)/rose company specialists (some/expensive) (e.g. Witherspoon-12 bush rose garden installed for \$1495)
- Control methods
 - Synthetic Pesticides
 - Bio Pesticides
 - Natural predators and natural products
 - Systemic Acquired Resistance (SAR)-*Messinger* for example
 - Tolerant or resistant rose varieties to disease/sustainable roses

Synthetic Pesticides are by far the most common

To Spray or Not To Spray...the eternal question

- Most rosarians spray with synthetic pesticides (e.g Banner Maxx/propiconazole). Fewer use natural/organic (Neem) or biopesticides (*Bacillus subtilis*).
- Some spray frequently (exhibitors)/preventatively (black spot). Some spray occasionally (insects) depending on the pest.
- Soil application (Bayer's **All in One**) (synthetic/neonicotinoid/non spray)...a simple approach for the beginner
- Some grow sustainable varieties of roses (**Knock Out**) and don't worry about care. Treat roses as no care landscape plants and never spray.

How are things changing?

Trends...Public Actions (RISE)

- Last Friday, the City Council of Minneapolis, Minnesota, unanimously passed a resolution declaring Minneapolis a pollinator-friendly community and commits to making improvements to City policy and practices to increase pollinator forage, including Minnesota native pollinator forage, and decrease pesticide use by all City departments. In addition to policies that apply to government-owned property, **the city also urges private residents and businesses to forgo the use of toxic pesticides**, plant more pollinator forage on their property, and **use organic or chemical-free lawn and landscaping practices.**

Trends...Research

- Two new studies published on neonicotinoids in Ontario soils were recently published in the journal Environmental Toxicology and Chemistry. The first study looked at [residues in surface dust versus parent soil](#) while the second investigated the [environmental persistence of neonicotinoid residues in southern Ontario soils](#). The first study concluded that the surface layer of tested soil had significantly higher residues of neonics than soil just below the surface. The second study concluded that neonicotinoid residues have a soil half-life of approximately six months which is substantially less than studies conducted for registration that reported longer persistence under bare soil conditions.
- [Two insecticides found to harm honey bee queens](#) – A research team from the Institute of Bee Health at the University of Bern allegedly found that two neonicotinoids negatively affect the reproduction of honey bee queens.

Trends...Other Pesticides

- [Study finds glyphosate and acetamiprid to have relatively low toxicity for honey bees](#) - This study investigated the toxicity levels of 42 “commonly used” pesticides by mimicking a scenario where an adult bee in a cotton field accidentally gets sprayed. Researchers allegedly found that 26 pesticides, including neonicotinoids, organophosphates and pyrethroids killed a majority of the bees that came into contact with test pesticide sprays. Seven pesticides—including glyphosate and one neonicotinoid (acetamiprid)—killed no bees in the tests.

Trends...Wildflowers

- Wildflowers serve as reservoir for controversial pesticides - Researchers found that the pollen of wildflowers, such as hogweed and poppies, contained neonicotinoid concentrations up to 86 parts per billion in pollen. Neonicotinoids were reportedly found in the soil at field margins and this was thought to be the most likely source of wildflower contamination.

Trends...Industry

- [Popcorn companies blamed for bee deaths](#) -
The Center for Food Safety is calling on two of the largest popcorn manufacturers, Pop Secret and Pop Weaver, to phase out the use of corn seeds that are grown with neonicotinoid insecticides, which they say are harmful to bees.

What attitudes do rosarians have about controlling pests?

- **The Exhibitor**-does what is necessary to grow the “perfect” rose/may make extensive use of synthetic pesticides and sprays often.
- **The Novice**-looks for information how to grow roses and which ones to grow. May start with no pesticide/sustainable roses only. Needs information.
- **The Giver**-grows a diverse group of roses and may not exhibit. They don't usually need the latest and greatest. Do use pesticides to some extent, so they have nice roses to share with friends.

What do different rose growers think?

- **The Socialist**-enjoys the camaraderie of the rose society. Rose growing actually may be secondary. May use pesticides on occasion.
- **The Parishioner**-comes to the rose meeting out of habit (like going to church every Sunday). Grows a few, mostly sustainable roses.
- **The Landscaper**-grows a few roses such as *Knock Out* and pays little attention to care. Roses are just shrubs.
- **The Activist**-is against the use of pesticides on roses and may campaign against them. Grows sustainable roses if any at all.

How do you see yourself??

What are the trends in the next 10 years?

- Many rosarians are “ageing out”. New rosarians exist but their dedication to the hobby is ?? Some people just need information.
- There are fewer sources of new roses. Nurseries and big box stores offer a smaller selection of roses. Mail order is best to obtain new roses.
- Sustainable roses are growing in popularity in ARS.
- Rose shows are declining in many areas (non sustainable roses). A few exhibitors supply 80% of the roses in any show. When they’re gone, what??
- Overall, the number of rose societies is declining. ARS membership is around 8,000 (stable?).

Can reliance on pesticides continue in the long term (20 years and beyond)?

- NGO (Non Government Organizations) activities will continue to threaten pesticide use.
- New state and municipality laws will restrict pesticide use.
- Regulatory rules and regulations will increase for new and existing pesticides (EPA). Older pesticides will be phased out.
- Bee issues, now butterflies, and other non targets threaten pesticide use, despite extensive environmental testing that supports their use.
- **Bees and the Neonics**--Scientific studies support the registration of current pesticides. Emotion plus poor or weak science often drive the case of the NGOs. The general public doesn't know and may distrust science.

Be prepared!!

Pesticides in the Future

- Need for greater environmental safety in a challenged world will decrease use of these products.
- Development costs for new pesticides continue to increase, making new pesticides less attractive for basic manufacturers. Roses are a small market!
- Consumer products are not particularly profitable compared to professional products (golf and lawn care)
- Fewer new modes of action for pesticides introduced. Pest resistance is more likely to current products.
- Basic manufacturers will be selling services and fewer products in a bottle (pesticides).

Is there a better way to control pests?

How will we control pests without current synthetic pesticides?

- Assume that old as well as new pests will continue to emerge
 - Green solutions-cultural practices—labor intensive
 - Organic/non synthetics—less effective than synthetics
 - Some new and selective synthetics with narrow spectrum
 - Biologicals—Must be applied more frequently
 - Plant Resistance or Tolerance/Sustainable Roses-best solution but years away
- Consequences
 - Will limit growing roses to fewer cultivars. Many of our rose show favorites will not be able to be grown.
 - Rose shows will need to change to accommodate sustainable roses...or die
 - Can't rely completely on the rose industry for sustainable roses (J&P--Ten roses that you must grow—*Radiant Perfume*?) ARS needs to confirm sustainability.

What will the rose world of 2035 look like?

- The hobby of rose growing will be different.
 - The rose society???
 - Will ARS exist and in what form?
 - The rose show???
 - How will it be different? Expos?
- Roses will still be grown and pests will still need to be controlled (more potted roses in city gardens).
- Reliance on pesticides will decrease dramatically and not be allowed in many places.
- Rosarians will need to be growing “sustainable” roses for the most part...preached at the Syracuse convention by the rose industry.



Questions/Comments ??