1- Initiation of the neonicotinoid reevaluation

- The reevaluation was initiated in early 2009 as a result of data, submitted by Bayer CropScience as an adverse effects disclosure, indicating that imidacloprid, when applied to soil of ornamental plants resulted in residue levels for up to 18 months, which potentially posed a hazard to pollinators, including honey bees.
- DPR included other chemicals in the reevaluation within the same chemical class as imidacloprid – nitroguanidine neonicotinoids – (thiamethoxam, clothianidin, and dinotefuran).

2- Reevaluation data requirements

- DPR required neonicotinoid registrants to conduct residue studies on pollen, nectar, and leaf samples in certain orchard and row crops.
- The crops were selected based on labeled uses and DPR's Pesticide Use Reporting information.
- DPR also required registrants to conduct acute toxicity studies on honey bee larva. All studies pending review

Crop	Imidacloprid **Bayer CropScience**	Thiamethoxam **Syngenta Crop Protection**	Clothianidin **Valent U.S.A.**	Dinotefuran **Mitsui Chemicals AGRO**
Almonds	Removed use	Removed use	Interim rept. 2nd Qtr 2015	NOT labeled
Citrus	Studies IN	Interim rept. 1st Qtr 2015	NOT labeled	NOT labeled
Cucurbits	Studies IN	Studies IN	Interim report received; Final report 2nd Qtr 2015	Provided existing study – req. to bridge
Strawberries	Studies IN	Interim rept. 1st Qtr 2015	NOT labeled	NOT labeled
Cotton	Interim report received; Final report 3rd Qtr 2015	Interim report received; Final report 3rd Qtr 2015	NOT labeled*	Provided existing study – req. to bridge
Fruiting Vegetables	Interim report received; Final report 1st Qtr 2016	Studies IN	Required study	Provided existing study – req. to bridge
Pome Fruits	Interim report received; Final report 1st Qtr 2016	Waiver Granted	Interim rept. 3rd Qtr 2015	NOT labeled
Stone Fruits	Interim report received; Final report 1st Qtr 2016	Interim rept. 1st Qtr 2015	Interim rept. 3rd Qtr 2015	NOT labeled

*DPR Enforcement branch determination that based upon bee hazard statement, product cannot be used on blooming cotton in California.

3- Study Findings To-Date

- There is some indication that soil plays a role in uptake of neonicotinoids. Applications made in coarse soil types result in higher residues. Applications made in fine soil types result in lower residues, but levels are so low that the product is efficacious for specific insects.
- Results of honey bee larva toxicity studies indicate that larvae are not a particularly sensitive life stage. The LC_{50}s have been above 1 ppm.
- Calculated acute adult honey bee oral LC_{50} is 185 ppb for imidacloprid, 190 ppb for clothianidin, 250 ppb for thiamethoxam, and 380 ppb for dinotefuran.
- Based on data reviewed to date, bee kills associated with treated seed appear to be the result of direct bee exposure to dust at planting.

4- Update on partnership with U.S. EPA and PMRA Health Canada

- DPR is working very closely with U.S. Environmental Protection Agency's (U.S. EPA's) Office of Pesticide Programs and Pest Management Regulatory Agency (PMRA) Health Canada.
- U.S. EPA is requiring neonicotinoid registrants to conduct a semi-field honey bee feeding study. Imidacloprid study completed with a final report received December 2014. Thiamethoxam and clothianidin studies underway with final reports anticipated November 2015. Dinotefuran study anticipated to start June 2015 with a final report anticipated September 2016.
- In addition, PMRA and U.S. EPA are requiring imidacloprid registrants to conduct a full field study in 2015. The registrants will conduct two studies, one in pumpkins to simulate exposure scenarios in Northern US and Canada, and a second one in California citrus. Because the citrus study will be conducted in California, DPR is providing input on the study parameters and will review the study protocol and results.
- Significant uncertainty remains with regard to toxicity of neonicotinoids to honey bees. We know that at sufficient levels the compounds are toxic to adult bees, but do not know whether exposure effects the hive as a whole.

5- More information on DPR's reevaluation

- Updates provided in *California Notice to Stakeholders* as a semi-annual report.
- Neonicotinoid reevaluation Web page. Go to <www.cdpr.ca.gov>, click on A-Z index, choose *Reevaluation*, and scroll to the section *Neonicotinoids*.