

# Drift Studies at Eurofins Agrosience Services

## Welcome To Eurofins Agrosience Services

### Drift / Dust Studies

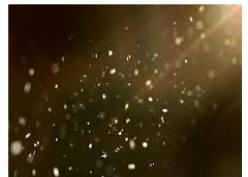
Drift of abraded dust of insecticidal seed treatments has allegedly resulted in bee poisoning incidents in the past. To investigate the dust deposition during sowing of coated seeds or granule application with pneumatic or mechanical sowing machinery, field studies are carried out following the Guideline 7029/VI/95 (rev. 5) with the partial integration of recommendations of the BBA Drift Guideline VII, 2-1.1 (1992).

We have been conducting dust deposition and dust filter trials since 2009 with different machinery, crops and in different countries. We can adapt the design of the requested study to your needs.

### Dust deposition trials

Dust (i.e. mechanical abrasion of the dressed seeds) emitted during seeding of dressed seeds or during granule application with pneumatic sowing equipment is collected using different sampling devices:

- Petri dishes filled with glycerol/water (1/1, v/v), horizontally arranged on the soil surface in certain distances to the seeding area
- Vertically erected and glycerol/water wetted gauze netting.
- Special requirements for this study type are wind speed ranging between 1.0 and 5.0 m/s and wind direction of  $90^\circ \pm 30^\circ$  to the drilling direction.



### Dust filter trials

For the determination of dust emission during seeding, a certain area is sown with coated seeds. After seeding the air filter and the tubing connecting the filter box to the fan exhaust outlet is removed and prepared for subsequent residue analysis.

The analytical phase can be done in-house and is fully supported by our laboratory.

The dust abrasion via the Heubach method can be assessed in-house in order to account for changes in abrasion resistance due to transport and handling of the bagged seeds.

### Dust applicator

For risk assessment purposes, tests with realistic applications of defined amounts of dust are needed, e.g. to determine NOEC or LOEC values.

However, tests with dusts are much more difficult than tests with liquid substances. Due to solid state and the varying particle size, it is challenging to develop standard ways of applying dust in situ and in vitro. In the field it is even more problematic to apply the low rates required in a practical way over a larger area. For this purpose we developed a method to apply defined amounts of dusts together with a dilution material in the field, to determine the effects of exposure on honeybees (*Apis mellifera* L.) or other non-target organisms.

A dust applicator was constructed specifically for ecotox trials - It is made up of a commercial fan used in seeding machines, a dust applicator (based on the design of a micro-granulate applicator), a seed distributor for pneumatic seeding using a 3-m boom with 24 nozzles.

The principle of the application is the distribution of dust through high air pressure into the plant cover.

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