

Improving seed treatment methods: A key factor to reduce the risk to Honey bees and other pollinators to maintain biodiversity

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Bee, this small little insect that works so tirelessly and quietly around us certainly is one of the reasons, if not a main reason, for the possibility of human development on earth. Without them, the development of life on earth would have been much different and the conditions for human development may not have existed.

The main reason is the contamination of flowering bee forage plants with dust particles abraded from seeds treated with the insecticides.



The Heubach values were higher in case of WS formulations. They were ranging between 13.5 – 24.5 for Hamid cotton variety and 23.3-25.4 for Barakat cotton variety. The values for the FS formulation ranged between 7-8.8 and 2.64-14.7 for Hamid and Barakat, respectively. The pesticide residues measured were found to be more for WS formulation compared to FS formulation for both tested varieties.

The current study investigated the amount of drift generated from seeds of two varieties of cotton using two formulation of the neonicotinoid insecticide imadocloprid through measuring the fine dust particles from various treatments using the Heubach methods

In this study the Assessment of free floating dust and abrasion particles of treated seeds as a parameter of the quality of treated seeds using HEUBACH TEST was carried.



Drift measured in Heubach Apparatus for different cotton seed varieties treated with various seed dressing

Cotton Variety	Chemical seed dressing	g drift/kg seed	Drift Reduction
Hamid (Medium Staple cotton)	WS (powder) formulation	1.23	64
	FS (liquid) formulation	0.44	
	Untreated Control	0.22	
Barakat (Long staple cotton)	WS (powder) formulation	1.19	90
	FS (liquid) formulation	0.12	
	Untreated Control	0.38	

Conclusion:

The results of the study indicated in general that the flowable concentrate formulation for seed treatment has lower risks than the water dispersible powder formulation by reducing the drift generated from pesticide treated seeds during sowing. Seed treatment improvement can play an important role to save pollinators and other negative side effects of drift of dust