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Bees Can Mediate Escape Of Genetically Engineered Material Over Several Kilometers

ScienceDaily (Sep. 27, 2008) — A study by scientists from the Nairobi-headquartered international research centre icipe, in collaboration with the French Institut de Recherche pour le Développement (IRD) has established that bees have the potential to mediate the escape of transgenes (genetically engineered material) from crops to their wild relatives over several kilometres.

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The findings, which have been published in the Proceedings of the National Academy of Sciences of 9th September, bear significant implications for the introduction of genetically modified crops in Africa.

The research, which was partly funded by USAID and the Rockefeller Foundation, was triggered by the planned release of insect-resistant genetically engineered cowpea in Africa, where cowpea's wild relative, Vigna unguiculata var. spontanea, is widely distributed. For the first time with insect pollinators, the scientists used radio tracking to determine the movements of the carpenter bee *Xylocopa flavorufa* and their implications for long-distance pollen

flow.

"Bees can visit flowers as far as six kilometres away from their nest. From complete flight records in which bees visited wild and domesticated plant populations, we concluded that bees can mediate gene flow, and potentially allow transgenes to escape over several kilometres," explains icipe scientist Remy S. Pasquet.

He adds that for genetically engineered cowpea in Africa, these results indicate that although pollen movement beyond a few hundred meters has a low probability, strict isolation by distance may not be feasible.

This research therefore confirms the widely held hypothesis that deploying genetically engineered cowpea in sub-Saharan Africa may mean that an escape of the transgene to the wild cowpea relative is inevitable.

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Bees have the potential to mediate the escape of transgenes (genetically engineered material) from crops to their wild relatives over several kilometres. (Credit: iStockphoto)

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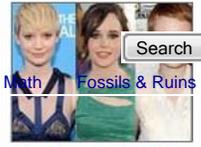
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