

**Title** Utilizing consumer-assisted selection and biotechnology to deliver the next generation of fragrant flowers

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### **Abstract**

In recent years we have gained much knowledge from experiments on transgenic plants focused on determining the molecular function of genes encoding enzymes involved in volatile biosynthesis. Using newly available complete genome sequences, it will not be long before most of the genes involved in the direct synthesis of fragrance compounds important to the floriculture industry will have been cloned and functionally characterized. Subsequently, the function of genes encoding the regulatory factors controlling the synthesis of fragrance volatiles will be defined, thus giving geneticists and biochemists the tools they need to produce plants with enhanced fragrance. In years to come, the basis for how fragrance has been bred out of many commercial floriculture crops will come to light, and breeders will then be able to efficiently bring fragrance back to appeal to consumers senses. To make this whole process efficient and most productive, it will be important to understand which fragrances consumers prefer for each crop, and use this information to guide efforts on breeding new fragrant varieties. The concept of 'Consumer-Assisted Selection' can be expanded from fragrance to any particular trait for any particular crop, and this will be the main topic of discussion in this presentation.