O-20 (246) Keynote Speaker
QTL MAPPING IN ORNAMENTAL CROPS: DEALING WITH COMPLEXITY

Prof. Paul Arens
Researcher Ornamental Breeding, Plant Breeding, Wageningen University Research, Wageningen, Netherlands; paul.arens@wur.nl

Most important ornamental plants are out crossing crops that are complex genetic hybrids resulting from interspecific hybridisation. The complexities of these crops are often aggravated with a relative large genome size and/or higher ploïdy levels. These characteristics pose challenges for genetic mapping and QTL studies. As a result, genetic analysis in ornamental crops have been lagging behind and for most crops there is a lack of genomic resources, DNA markers, genetic maps and genome sequences. However, with Next Generation Sequencing technologies generating genomics resources and identifying SNP markers has become much easier. This enables the generation of genetic maps and performance of QTL studies in diploid ornamental crops like tulip (Tang et al., 2015) and gerbera (Fu et al., 2017). Next to that, with high throughput SNP genotyping technologies and increasing computational power, genetic analyses in polyploids also become within the possibilities (Bourke et al. 2017) for tetraploid (eg rose) and hexaploid (eg chrysanthemum) species. Within the presentation, some developments for genetic analyses in ornamentals will be presented along with examples of their use in a number of specific crop studies.