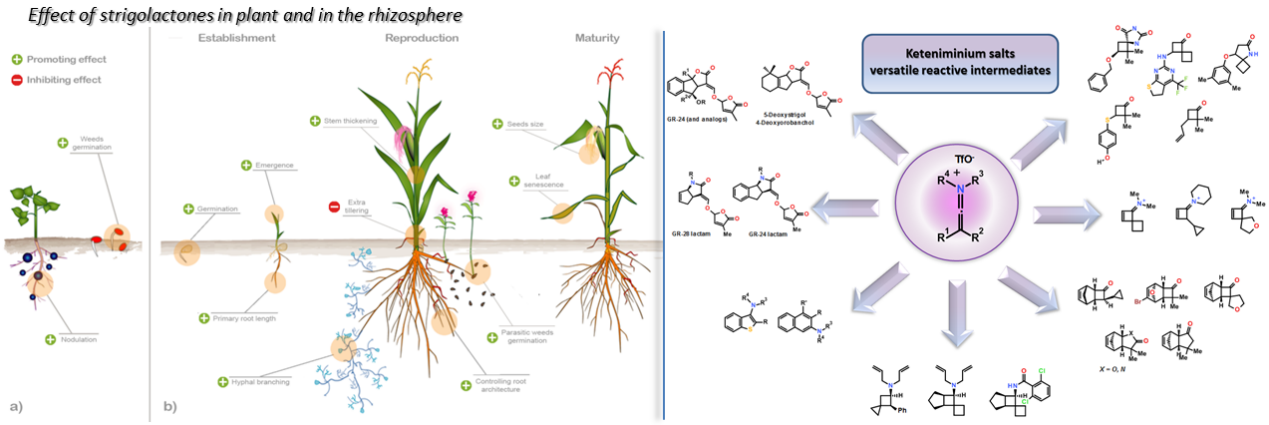
Use of keteniminium salts for the synthesis of strigolactones for crop enhancement applications, of small rings and of aromatic derivatives

Alexandre Lumbroso, Amandine Kolleth, Pierre-Yves Dakas, Mathilde Lachia, Stefano Rendine, Claudio Screpanti, Raymonde Fonné-Pfister, Saron Catak, Sarah Sulzer-Mossé, Alain De Mesmaeker*

Syngenta Crop Protection AG, Crop Protection Research, Research Chemistry, Schaffhauserstrasse 101, CH-4332, Switzerland

New technologies able to mitigate the main abiotic stresses (i.e. drought, salinity, cold and heat) represent a substantial opportunity to contribute to a sustainable increase of agricultural productions. In this context, the recently discovered phytohormone strigolactone is an important area of study which can underpin the quest for new anti-stress technologies.[1,2] The pleiotropic roles played by strigolactones in plant growth/development and in plant adaptation to environmental changes can pave the way for new innovative crop enhancement applications. In this context, we have developed a straighforward access to natural strigolactones and new potent synthetic analogs (strigolactams).[2]

Exploiting our experience in keteniminium chemistry, new accesses to functionalized small rings have been developed based on [2+2] cycloadditions between keteniminium salts and alkenes or alkynes which can be followed in the latter case by a Michael addition or a [4+2] cycloaddition reactions.[3,4,6] Methodologies to prepare functionalized amino-benzothiophene and naphtylamine derivatives have been also developed using a 6π- and 6π/10π -electrocyclization, respectively.[5]



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