New and scalable access to Karrikin (KAR_1) and evaluation of its potential application on corn germination

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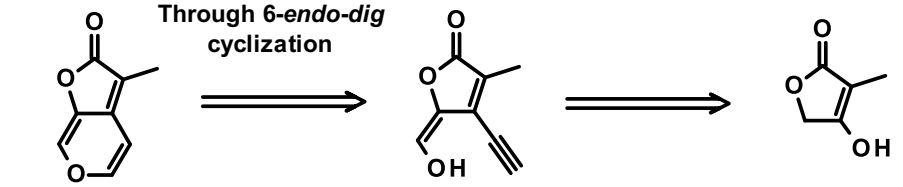
Karrikin (KAR1) also named "karrikinolide" was isolated in 2004 from smoke water and identified as a very potent germination stimulant as well as controlling early seedling development for a large variety of plant species. We reported herein an unprecedented and scalable synthesis of Karrikin KAR1 based on an elegant and efficient 6-*endo*-dig cyclisation. Moreover we evaluated the effect of KAR1 on corn seeds germination, we carried out additional studies on the uptake of this butenolide into corn seeds and the main soil chemiodynamic properties (i.e. persistence and mobility) were calculated or estimated. Finally we provided a rationalization of the experimental results by building a homology model of corn KAI2, using as template the X-ray of the KAI2 protein from Arabidopsis thaliana.



Karrikin / KAR_1

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