PreVasive Product genesis

Phenylpropanoid biosynthetic pathway and diversity of EO secondary metabolites

Computational biology, combined with the analytical sensitivity to detect trace compounds and smallest changes in the metabolite, transcript or enzyme pattern. Has facilitated progress towards a comprehensive view of the plant response to its abiotic environment.

Phenylpropanoids (phenylpropanoids are a diverse family of organic compounds that are synthesized by plants from the amino acids phenylalanine and tyrosine. Their name is derived from the six-carbon, aromatic phenyl group and the three-carbon propene tail of cinnamic acid, which is synthesized from phenylalanine in the first step of phenylpropanoid biosynthesis).

Phenylpropanoids contribute to all aspects of plant responses towards biotic and abiotic stimuli. Not only are plant organic compounds indicators of plant stress responses upon variations of light or mineral treatment, but they are also key mediators of the plant's resistance towards pests. Some plants use these metabolites to attract ant eating wasp to rid themselves of harmful ants or as signals to pollinators, repellants to pests and anti-fungal or antiviral constituents. Plants also use these metabolites to promote invasion of new habitats and provide biochemical resources for successful reproduction. These secondary metabolites are ever responding to environmental signals in the production of the most appropriate exudates (plant chemicals) for its survival.

The magnificent diversity of phenylpropanoids, is the result of super-efficient modification response and amplification to current environmental stress and pest pressures using a very limited set of core structure compounds.

Aromatic amino acids lyases (*enzyme catalyze-to date cannot be done non-enzymatic*ally), link the pool of phenylalanine and tyrosine to biosynthetic pathways sometimes down graded as secondary metabolism which turn out to be particular equivalently to plant survival. The diversity and plasticity of the resulting natural plant products, more specifically the phenylpropanoids, are achieved by a set of enzymes organized in superfamily's via developmentally and spatially controlled expressions that specifically contribute to tissues of plant specific chemical phenotypes (*the observable properties of an organism that are produced by the interaction of the genotype and the environment*).

These primary and secondary metabolites', 'natural plant products" engineered in the most up to date environmental laboratory" Nature" are found in different tissues (*stems, roots, leaves, bark, seeds and fruits)* all contain much diversity of plant chemicals that can be used in a multitude of applications. (*These metabolites are the genesis of PreVasive natural products).*

The science of what plant constituents to combine from what part of the plants, when to harvest, where to harvest and the extraction process of these plant oils for use in antimicrobial and pest control products have been researched and trialed for more than 14 years leading up to the launch of PreVasive USA. You will find the benefit of our effort in PreVasive products like the organically grown BAC antimicrobial cleaner and the BigShot series products for mosquito control, mosquito repellant and BigShot agriculture broad spectrum pest and fungal control.

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