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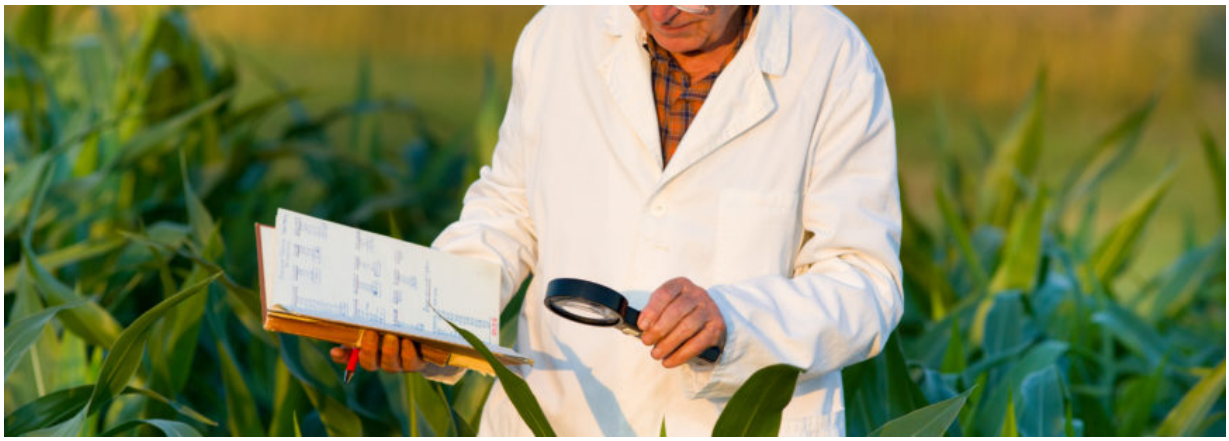
MAXIMIZE THE GENETIC POTENTIAL OF PLANTS



For many years **Agronomists and Agricultural Engineers** have tried to face the challenges of modern agriculture using the tools we thought we had at our disposal: the best selected seeds, the best commercial varieties, the best substrates or soil preparation, the latest advances in plant nutrition, all those phytosanitary weapons approved at our disposal and any other **tool that would allow us to face the challenges** of the field, which are always unpredictable.

Nowadays, when you read the previous paragraph, you should miss a concept that, far from being new, because it was understood as excessively theoretical and impractical, only a few decided to invest in it. This is undoubtedly **Plant Physiology** or as Jerry Stoller described more than thirty years ago, "**The language of plants**."

In the mid-1980s, a visionary of our time and an agriculture enthusiast, **Dr. Jerry Stoller**, discovered that much of the **genetic potential** of our crops is lost throughout the crop cycle due to the plants' need to adapt or overcome the different challenges that are presented to them in the form of stress. This was the starting point to delve into all the information that was known and which in the following years was discovered about Plant Physiology.

Dr. Jerry Stoller giving a seminar to producers

It turns out that plants are **much more complex than we usually assume** and both their ability to analyze the environment and their ability to adapt to continuous changes are the key to their evolutionary survival. Every day more scientists recognize that there is a **certain "intelligence" in the plants** since they are organisms that not only communicate with each other in the distance through the emission of chemical substances, but there is a whole "language" that allows for the continuous communication between the different parts of the plant.

Knowing the internal "language" of the plant, understanding how those **messages in the form of hormonal substances** travel from one point to another and modify the behavior of the target tissues is the key to the next step in modern agriculture. Today it is no longer enough for us to provide the plant with essential nutrients for its development, we must also know what are the exact needs of certain natural hormones so that their development and productivity are maximized.

Agronomists must not only know what are the nutritional needs of a crop and the different relationships between N, P, K and microelements in each of its phases. It is imperative that us Technicians revalue ourselves thanks to all the knowledge acquired that should allow us to **anticipate the most imminent future of the crop's behavior** based on reliable information about its management conditions, soil and climate. The knowledge of Plant Physiology will allow us to combine knowledge of plant nutrition with those of behavior based on changing environmental conditions, allowing us to anticipate possible problems or physiopathies that, until recently, were treated with great difficulty.

In the last thirty years, Jerry Stoller and his company have tried to explain what this **internal "dialogue" of the plant consists of** and how, knowing what happens in each phase of the crop in the different parts of the plant, we can then take care of guaranteeing that the levels of plant hormones in each part of the plant are correct in order to reach or **develop their full genetic potential**.

In the first document that Jerry Stoller published, which is patented, not only was **the role of each plant hormone** already mentioned but a very simple diagram that allowed to understand the importance of the hormones in each phase of cultivation, as well as their interaction with the nutrients. This diagram (see Image 1: Plant hormone cycle) has been, on countless occasions, used and published by many people, companies and blogs, although unfortunately the contribution of Mr. Stoller and his company has not always been recognized as the source of such knowledge.

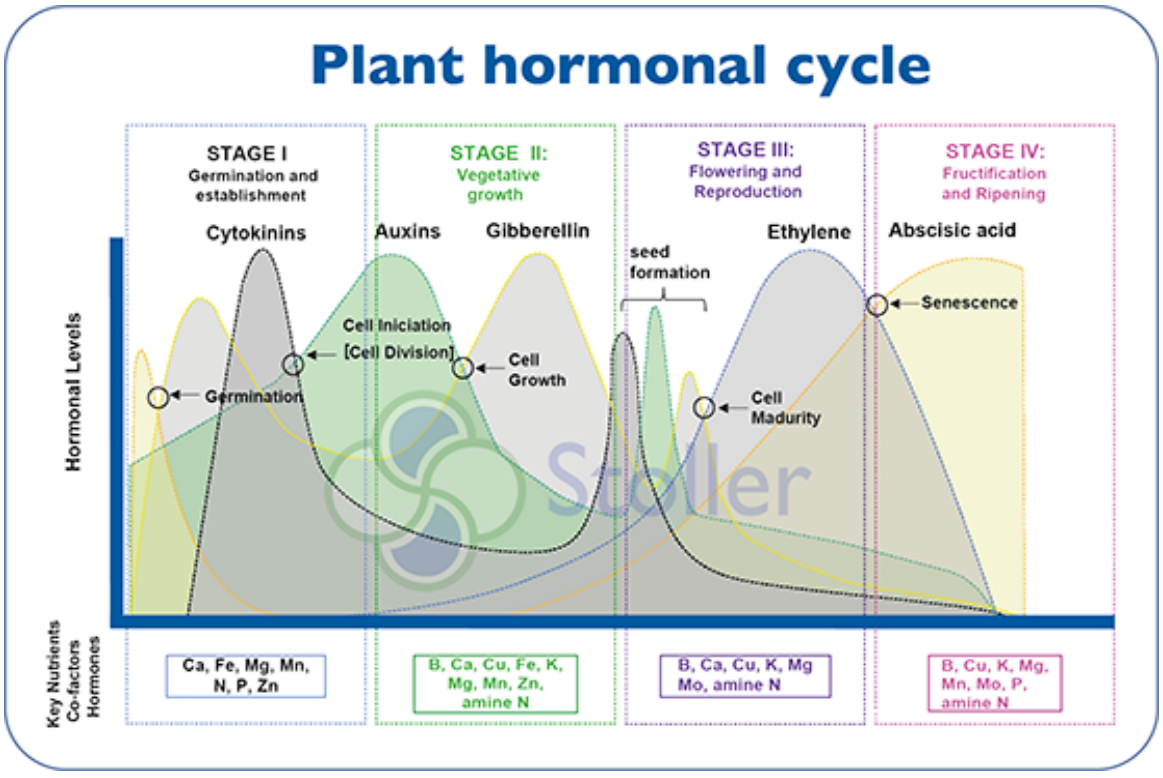


Image 1: Plant hormone cycle

In recent years, the **Stoller** company has continued its **passion for researching and explaining the "plant language"** and, as a result of this dedication, has created, patented and shared an evolution of its first diagram. This second diagram (see Image 2: **Updated plant hormone cycle**) delves into the knowledge of the levels and dominance of each of the five main natural hormones within the plant, as well as their more than intimate

interaction between each other and nutrients. Knowing and understanding this "language" is a **valuable tool** for any agronomist who wishes to contribute value to the field by increasing productivity and reducing production losses.

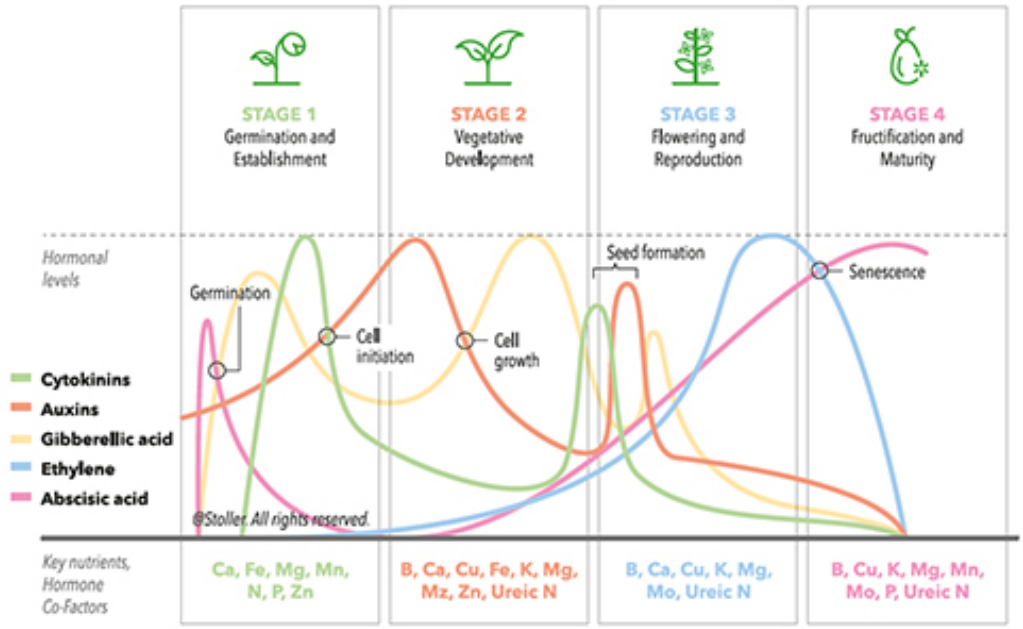


Image 2: Updated plant hormone cycle

Written by Sergio Aguilar

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