



# The Path to Agriculture 4.0

For true effectiveness, biostimulants will rely on the support of technological services.

## Q What is the outlook for the biostimulant market in 2019?

The forecast predicts market growth in 2019, with a percentage exceeding 10%. The market value is expected to reach more than U.S. \$2.2 billion.

The reasons for this growth are clear: It is no longer just about feeding 10 billion people but about creating value for all the members of the agricultural value chain. This is the value inherent in the adoption of biostimulants: sustainability but also productivity and therefore greater profitability. Looking at the specific characteristics of the market, the main drivers of growth can be summarized as follows: orientation toward the use of effective products that are safe for the environment and for the user, which can prevent and avoid excessive loss of soil fertility; the increase in the use of biostimulants, even outside the “pioneering” countries in this segment; research by companies into new products that meet specific agronomic needs; and the increase in the use of these products in row crops by end-users. The great feature of the biostimulant market continues to be its dynamism, a feature which leads to an increase in competition, with new companies constantly entering the competitive arena (according to our estimates, about 15% of companies in the sector started up in the last eight years). This scenario increasingly paves the way for mergers and acquisitions led by big-market players.



Giuseppe Natale

## Q What are the challenges that still must be overcome before there is wider acceptance of biostimulants?

Increasing the biostimulant industry’s credibility will be the real keystone. To achieve this goal, on the one hand, investment in scientific research is essential. Today we are witnessing the efforts of the international scientific and academic community to understand and disseminate the mechanisms that regulate the functioning and efficacy of biostimulants, in order to

bring the market increasingly significant and authoritative evidence for the benefits of this innovative category of products. Scientific validity is the precondition for supply and demand to feed each other, making the market thrive. On the other hand,

regulation for the sector becomes equally critical. The current lack of regulation creates strong barriers to market development because there is no unanimous answer to what plant biostimulants can really do on their safety and ultimately on their identity with respect to other categories of agricultural products. However, compared to the past, the regulatory framework is evolving positively. In Europe the new regulation on fertilizers is proceeding through the final phase of the text’s trialogue. This regulation contains a new category of plant biostimulants (based both on substances and on microorganisms), and, moreover, the plant protection regulation has been revised to establish a clearer border between the new plant biostimulants and plant protection products. In the United States the latest law in this area aims to frame plant biostimulants as a new category of product.

## Q What are the most significant trends around biostimulants?

Investment in innovation is surely one of the most significant trends. This does not only mean combining biostimulants with traditional nutrition products but also integrating this offer with technological services that can guarantee added value to farmers. For biostimulants to really be effective, there is a need for highly professional and specialized support, which begins with analysis of the crop’s specific needs in order to find optimal methods and doses for the use of the most effective solutions. This is what guarantees that farmers can make the most out of their production. But today analysis of a crop’s specific needs rather than indications on the optimal timing for using nutrients, just

**A**GRIBUSINESS GLOBAL™ interviewed Giuseppe Natale regarding the current state of biostimulants. These are the words of the President of the European Biostimulant Industry Council (EBIC):

to cite some examples, can benefit from the support of the advanced applied technology systems for the sector. This is what is often called Agriculture 4.0, a truly sustainable form of agriculture because it aims for efficient and effective use of agricultural inputs thanks to the opportunity to analyze and use, in a simple, fast, and therefore effective way, large amounts of data to support producers in the decision-making process.

## Q Has the sourcing of these products changed in any way over the past few years that changes how they are viewed?

Beside the most “traditional” sources of these products represented by seaweeds and plant extracts, over the past few years there has been an observed increase in microbial-based solutions (bacteria, fungi, yeasts, and their metabolites) and their combination with classical biostimulant materials. Such combination of classical and non-classical sources has driven the concept of biostimulants toward development of complexes with novel or emergent properties, including live-like microorganisms.

Also, within the classical sources, over the past years a lot of attention has been paid on the optimal raw material composition and processing. Indeed, commercial biostimulant manufactured from similar sources are usually marketed as equivalent products but may differ considerably in composition and thereby in efficiency.

Finally, the trend is also going toward the decrease of animal sources for the formulation of new biostimulant products, thus supporting the concept of sustainability and safety of such products.

## Q What is the state of R&D when it comes to biostimulants?

According to the European Biostimulant Industry Council, the range of investment in R&D activities by companies operating in this market segment is 3% to 10% of the total annual turnover, a considerable percentage compared to the amount of resources invested in mineral fertilizers, equal to 0.05%. 🌐