New and Upcoming Advancements in Seed Treatments

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Abstract

Seed treatments are rapidly changing within our marketplace: we see increased substitution of seed treatments for foliar and soil applied applications and the desire to protect higher value genetically modified (GM) seed. Seed treatments also offer great convenience to the farmer as these treatments are normally more complete and easy-to-apply. This presentation will provide a review of current and historical seed care utilization trends and a number of new active ingredients that have come into the market recently or that will soon appear—offering control of new pest targets or alternative active ingredients and rotation partners for currently controlled pests.

Seed Care Use Trends

Due to numerous factors including high value seed, convenience, changing production practices, new product offerings, increased availability, new pests, and increased grower expectations, the use of seed-care products is on the rise from a global perspective. The current growth rate is estimated at 10% per annum and is expected to continue at the current pace through 2012. Use of seed care products in the United States, Canada and Latin America are commonplace and will continue to drive growth, along with emerging growth markets in Europe and the Asia Pacific regions. Although predominantly driven by insecticides, the use of fungicides and nematicides are on the rise and expected to be the key drivers through 2012. Corn, soybean and cereals are the main crops behind the current growth; however, there is an increasing trend for use on vegetables, rice, sugarcane, cotton, and oil seed crops.

Of the current $2.1 billion seed-care market, fifteen crop countries represent 75% of the total market. Sales are also concentrated in ten active ingredients, which represent approximately 60% of the total market. Current and new product offerings are expected to increase sales to approximately $3.2 billion by 2012.

The current market access of seed care products is dominated by distributors and retailers; however, widespread adoption by local seed companies and major seed companies (i.e., Syngenta Seeds, Mycogen Seeds, Pioneer and Monsanto) is believed to be the trend of the future. Ease of use by growers and the increasing cost of seed are main drivers for this trend.

Syngenta and Bayer Crop Science currently represent two-thirds of all seed-care sales, while generics have a small share and have grown only marginally. The use of generic products is mainly concentrated in the Asia Pacific and the Eastern European regions in which the market is highly fragmented.

New and Upcoming Advancements

Of the approximately 100,000 compounds that are screened annually for use as seed care product, only one to two are successful in making it to the market. Most companies concentrate on both internal research and joint collaboration in order to assist in finding successful compounds. In December of 2008, Dow AgroSciences and Syngenta embarked upon a collaboration to evaluate and jointly develop Dow compounds for use in Syngenta Seed Care products. Dow AgroSciences and Syngenta will target opportunities to maximize crop vigor and yield in field crops and vegetables through synergies between the two companies' chemistries. Joint projects will aim to accelerate the delivery to market of high-performance seed treatment and seed enhancement technologies. Dow AgroSciences' compounds will be used in combination with Syngenta's portfolio; products arising from the collaboration will be commercialized by Syngenta.

As previously mentioned, insecticides are the main drivers of seed care products. However, fungicides, nematicides, and new technologies are expected to be key drivers for future seed-care growth. Known to be a major pest in cotton, nematodes were also suspected to be major pests in corn and are often confused with cultural and other misidentified pest issues. Through the discovery process, Syngenta developed and is currently marketing a seed-care nematicide product, Avicta, in both corn and cotton. In 2007, Syngenta launched a research project to determine the number and species of nematodes present in the Midwestern Corn Belt. The project consisted of randomly sampling three fields in each county with at least 25,000 acres of corn. Samples were processed by five university labs and one private lab. Mapping intensity by species and overall nematode numbers by county (nematode counts/100 cc soil or gram of root) were determined. The researchers found thirteen different nematode species at varying levels throughout the Corn Belt. Large-scale field testing was implemented and research to date has shown favorable nematode control and increased yield with the use of Avicta Complete Corn®.

Annually, new compounds are continually evaluated for use as seed-care products. Although research continues for novel and improved insect-, fungus-, and nematode-control, products are also being evaluated for use to control current unmet pest needs, for extended pest control and as-applied crop enhancers.

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