Message

From: HEYDENS, WILLIAM F [AG/1000] [redacted]
Sent: 2/4/2016 8:00:26 PM
To: Ashley Roberts Intertek [redacted]
Subject: Introduction Paper
Attachments: Introduction_Expert Panel_Added HX & Use Info.docx

Ashley,

How about this? Does this help convey that glyphosate is really expansively used?

Note that the 1st paragraph already existed, but I modified it in a couple places toward the end; the 2nd paragraph is new.

Bill

Glyphosate is an active ingredient that is widely used in a variety of herbicide formulations to control annual and perennial grasses and broadleaf weeds. It is a non-selective herbicide that inhibits plant growth by interfering with the production essential aromatic amino acids; specifically, this interference is accomplished by inhibition of the enzyme 5-enolpyruvylshikimate 3-phosphate synthase, which is responsible for the synthesis of chlorismate, an intermediate in the synthesis of phenylalanine, tyrosine and tryptophan amino acids. This enzymatic pathway for synthesizing aromatic amino acids is not shared by members of the animal kingdom, thereby providing a basis for specific selective toxicity to plant species and contributing to the low risk to animals and humans.

The herbicidal properties of glyphosate were discovered in 1970, and the first glyphosate product was introduced in 1974 for industrial weed control uses (Franz *et al.*, 1997). In 1976, glyphosate was approved in the United States for various agricultural uses which included weed control in perennial crops and pre-planting or post-harvest with certain annual crops. Throughout the 1980s and early 1990s, a wide variety of new uses were developed for agricultural, industrial (*e.g.*, forestry, aquatic weed control), and home & garden applications; for instance, reduced and no-till systems were introduced in 1986 which serve as a tool to help preserve topsoil. In 1996, Roundup Ready® technology was introduced which permitted direct application for weed control in glyphosate-tolerant crops and served to broaden glyphosate's agricultural footprint substantially over the ensuing years. Today, glyphosate is one of the world's most widely used broad-spectrum herbicide products which accounts for approximately 25% of the global herbicide market (http://www.glyphosate.eu). Glyphosate is currently marketed under numerous trade names by more than 50 companies in several hundreds of plant protection products around the world. More than 160 countries have approved uses of glyphosate-based herbicide products (http://www.monsanto.com).