

Developing a Bioherbicide for Today's Agriculture. Louis G. Boddy*, Marrone Bio Innovations, Sacramento, CA. *Corresponding author lboddy@marronebio.com

Bioherbicides can be characterized as herbicides derived from a living substance and possessing a complex mode of action. A focus on natural product chemistry offers the potential for developing microbial- or plant-based products that generate a range of phytotoxic symptoms and employ a variety of modes of action. An example of such an approach is MBI-014, based on a soil bacterium formulated as a wet dispersible granule. It is particularly effective on *Amaranthus* species, has some systemic activity and contains at least two herbicidally active molecules with novel modes of action. A second example is MBI-011, based on the molecule sarmentine, isolated from the long pepper plant; this broad spectrum herbicide disrupts cell membrane integrity, inhibits fatty acid synthesis and inhibits photosystem II.