In the Members Forum of the May issue of CSA News magazine (p. 26–27), there was an article about the importance of “Precise, Accurate Language in Scientific Articles” (Fribourg, 2015). While the value of precise and accurate language is obvious to scientific writing, Henry A. Fribourg’s article was vague and misleading in its critique of organic farming. It is not a crop growth-limiting prohibition of external sources of “certain atoms/molecules” that defines modern organic farming systems. To allow that image to stand would perpetuate a common misperception of organic agriculture (Heckman, 2006). Rather, organic farming is more accurately defined as an ecological system of farming, as indicated in the subtitle of the ASA, CSSA, and SSSA publication on this subject: Organic Farming: The Ecological System (Francis, 2009).

Dr. Fribourg also states that “organic molecules cannot penetrate root hairs.” While this paradigm that plants “find new nutritive material only in inorganic substances” does indeed date back to the 1840 writings of Justus von Liebig (Van der Ploeg et al., 1999), a rising tide of more recent research suggests a scientific revolution (Kuhn, 1962) ushering in a new world view on plant nutrition is under way. Plants, including several agricultural species, take up organic N forms ranging from amino acids (Nasholm et al., 2000; Weigelt et al., 2005), to proteins (Paungfoo-Lonhienne et al., 2008), to bacteria and even yeasts (Paungfoo-Lonhienne et al., 2010). These studies have demonstrated that plants cannot only take up these diverse N forms directly without assistance from other organisms, but also that these crop plants utilize these diverse N forms as sources of N nutrition (Nasholm et al., 2000; Weigelt et al., 2005; Paungfoo-Lonhienne et al., 2008). Providing N as an amino acid even changes plant biomass partitioning, ranging from sugarcane (Aguetoni Cambui et al., 2011) to Scots pine (Gruffman et al., 2012), displaying increased allocation to roots and increased nutrient acquisition under organic N regimes. This feedback between soil chemical environment and plant morphology is one mechanism by which organic cropping systems, increases mycorrhiza (Lehman et al., 2012). Mycorrhizae take up and transfer a wide array of nutrients and soil resources, including intact amino acids (Whiteside et al., 2012), to crop plants. Thus, whether organic molecules penetrate root hairs or are delivered into plant roots via their microbial symbionts, ample scientific evidence indicates organic molecules do indeed enter plant roots and contribute to plant nutrition (Nasholm et al., 2009; Paungfoo-Lonhienne et al., 2010).

Meeting the “food and fiber needs of a growing world population” is a persistent challenge for all the diverse farming systems around the globe. However, modern organic farmers construct their production systems using a continuously evolving suite of practices that are guided by our rapidly increasing understanding of underappreciated ecological feedbacks at play in agricultural ecosystems. We concede that past communication of the potential benefits has sometimes been vague (soil health, invigorating soil). But, we also assert that recent advances in our abilities to scientifically document ecological interactions...