Editorial Submission

December 2012 | Final

About This Article

Key words**:** bio fertilizer, soil, carbon, biosolids

Word count: 560

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Biosolids: The Right Thing To Do

As chemical fertilizer supply is being depleted, the long-term security of our food supply demands that biosolids be recycled as biofertilizer to meet the needs of sustainable agriculture. This practice is supported by many scientific organizations and their governments in the UK, the European Union and in the United States, all of which have all attested that there is no evidence that the systems, regulations and practices implemented for use of biosolids in agriculture in these jurisdictions have had any negative affect on human health. In addition, at a time when the increasing cost of chemical fertilizers is eating into farmers crop production margins, use of biosolids as a replacement for some of the nitrogen (N), phosphorus (P) and potassium (K) value of chemical fertilizers provides farmers with considerable relief on their fertilizer costs.

There are other very important reasons for replacing at least a portion of chemical fertilizer demand with organic fertilizer such as biosolids. Nitrogen, phosphorus and potassium are not the only nutrients removed from the soil when plants are grown and harvested. The soil also supplies plants with a wide range of other nutrients, termed micronutrients, essential for plant growth. It is well known that intensive farming over time removes these essential micronutrients, thereby diminishing soil fertility. These micronutrients also end up in biosolids and hence application of biosolids to land recycles these essential micronutrients to the soil, whereas chemical fertilizers do not.

It is also well established that replacement of chemical fertilizers with biosolids and other organic fertilizer substantially improves soil organic matter in a number of ways. Firstly, this enhanced organic content improves soil quality properties, including its structure, stability and soil surface strength. With biosolids application, soil porosity (how much water soil can hold) is increased properties of increased water infiltration, water holding capacity and aeration are also improved.

Secondly, enhancement of soil surface strength protects against soil erosion. The higher the organic content of soil, the greater its capacity to retain water rather than loosing water through evaporation. Thus, while some have expressed concerns that land application of biosolids could enhance undesirable run-off of fertilizer nutrients to waterways, properly applied biosolids in fact have the opposite effect by promoting water retention in soil, reduced water and nutrient run off, and supporting water conservation. One can easily appreciate that this is particularly important during prolonged periods of drought, for example, as were experienced in more than half the states in the US and in large parts of Canada during the summer of 2012.

There are also other important global environmental beneficial effects in replacing synthetic chemical fertilizers with biosolids. Chemical fertilizers use more energy during their production compared to the low energy use involved in recycling of organic products such as Lystek's bio-fertilizer. In addition, soils treated with biosolids and other organic fertilizers have an elevated capacity to sequester and retain organic carbon as compared with soils receiving synthetic fertilizers. The combined effects of the lower energy inputs and enhanced carbon retention reduce the release of greenhouse gasses to the atmosphere and reduce global warming.

In conclusion, biosolid application is something we all need to support. Scientific evidence has demonstrated properly regulated biosolids are safe for land application. Biosolids are cheaper than synthetic fertilizer meaning cost savings for farmers. Biosolids application also recycles other micronutrients to the soil which are essential for plant growth and long term soil fertility. The organic content of biosolids greatly improves soil structure, water retention and reduces soil erosion. Finally, agricultural use of biosolids in place of depleting chemical fertilizer reserves contributes to long-term sustainability of agriculture and the food supply, reduces greenhouse gas emissions and counteracts global warming. Simply put: land application of biosolids is the right thing to do.

~Owen P Ward BSc, PhD.

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