

Cover Crops

In the last two segments of *Cane Planter*, several alternative uses for fallowed (idle) sugarcane fields were described. The planting of soybeans or wheat after plowing the last ratoon of sugarcane has helped producers in our area not only to help pay for expensive weed control and field preparation expenses, but also has helped reduce soil erosion of fertile top soil, add organic matter that improves tilth, and in some cases, enhances weed control of certain weeds due to shading and competition by the fallow crop. These two specific instances of crops grown and fallow land (there are potentially many others) allow producers to harvest the alternative crop to produce income. However, all potential uses of alternative crops in fallow fields or even grown within the sugarcane do not necessarily require actual harvesting to be beneficial to a sugarcane operation.

Cover crops have been used for years in certain crop situations. Some countries may have already successfully utilized cover crops in sugarcane production, but most have not. A cover crop would be defined in this context as a plant species that is planted and grown either prior to sugarcane planting or planted in established sugarcane. With the escalating costs of fertilizer inputs and herbicides, producers are looking to alternatives to costly alternative inputs. In addition, the growing popularity among consumers for organically grown food and fiber is spurring interest in looking at cover crops to biologically aid in reducing herbicide and inorganic fertilizers in sugarcane production.

There are numerous potential species of plants that could make a suitable cover crop in different parts of the world. But to be a suitable cover crop in sugarcane, a few universal attributes would be desirable. First, the cover crop should not have a net negative impact on sugarcane yield whether planted prior to sugarcane establishment or grown along with the sugarcane. Secondly, a legume cover crop would normally be preferred as by their very nature, leguminous plants produce plant available nitrogen from the air through a symbiotic relationship with rhizobium bacteria colonizing its roots. Much of the nitrogen is utilized by the cover crop itself, but in many cases studies have shown that plant available nitrogen is produced in excess that results in a positive impact on neighboring plants. This is often referred to in scientific publications as a “nitrogen credit.” And lastly, a planted cover crop should not be a potential future weed problem following its useful time frame. Since legumes are dicots and sugarcane is a monocot, inexpensive phenoxy or triazine herbicides can keep most all leguminous plants from becoming a potential weed problem in sugarcane production.

The advantages of cover crop could potentially be very economical to a sugarcane producer, but this greatly depends on what part of the world the crop is produced. Legume crops grown either in the fallow period prior to sugarcane planting or planted within the crop could greatly reduce fertilizer inputs, particularly nitrogen, applied to sugarcane. It is often a concern that cover crops could consume potassium, phosphorous, and other nutrients that the sugarcane crop needs. However, as long as the cover crop is not removed from the field, these nutrients would be put back in the soil when the cover crop is killed either by herbicides, cultivation, or natural senescence.

Another added benefit in utilizing a cover crop is that certain plant species could aid in suppressing problematic weeds that are normally not controlled with herbicides. In addition, planted cover crops could also help to reduce erosion of fertile top soil that could be detrimental to long term, sustainable sugarcane production.

Of course, the key for a cover crop in any specific cropping situation and growing environment is finding a suitable cover crop species with the proper planting date and life cycle duration that coincides with the optimum fertilizer requirement of the sugarcane crop. But there are many species of cultivatable plants throughout the world that may offer economic alternatives to traditional farming practices.

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