Hairy Vetch Project could help Lake Okeechobee
By: Corine Burgess

Phosphorus (P) is one of the main components in most fertilizers. It is important for growing crops because it enables plants to store and transfer energy, promotes root, flower and fruit development and allows early maturity. Although, phosphorus is important to crop production, it also has a down side. Run off from fertilizers that contain phosphorus can promote rapid growth of algae in downstream bodies of water. When algae is too abundant and once it decays, it steals the oxygen from the water which can harm and even kill the plants and animals that live there.

This scenario has taken place with Lake Okeechobee. The United States Environmental Protection Agency has mandated the loads of phosphorus in the lake must be no more than 140 metric tons per year. Currently the loads are about 400 to 500 metric tons per year. In an effort to reduce the amount of phosphorus entering the lake, a partnership between the South Florida Water Management District, Istokpoga Marsh Watershed Improvement District/Highlands County, the Highlands Soil and Water Conservation District and the Florida Department of Agriculture and Consumer Services has formed. It is a huge task and many steps must be completed to accomplish the goal.

The Lake Okeechobee watershed is over 3,500 square miles. It extends as far north as Orlando, south to Highlands County, west to Fisheating Creek and east to St. Lucie County. Many different tasks are being instituted to decrease the phosphorus load including changing practices upstream. For example, it is no longer permissible for sludge from water treatment plants to be disposed of in this area. Many private land owners are being provided incentives to place storage ponds on their lands, thus sequestering the phosphorus in a project entitled Florida Ranchlands Environmental Services Project (FRESP).

The Istokpoga Marsh Watershed lies within the area that runs downstream into Lake Okeechobee. In an effort to reduce the volume of stormwater that is discharged from this area, the team plans to install three above ground storage areas to hold water. If operated and maintained properly, these storage areas should capture phosphorus by allowing the chemical to settle on the bottom and be incorporated into plant matter, much like a natural wetland. In addition, the landowners in the area will be able to utilize the stored water for irrigation purposes, thus recycling the precious resource.

To date, over six million dollars has been spent on the purchase of land for these storage areas and more land is needed. The goal is to obtain 1200 acres of surface area for these ponds. Dr. John Causey, Supervisor for the Highlands Soil and Water Conservation District has come up with an idea that may save money and take up a lot less space. Thinking outside the box and coming up with some cutting edge ideas, Dr. Causey's plan is to plant a crop that will sequester phosphorus. "This hasn't been tried anywhere in the state of Florida and the cost so far is under $2,000.00," Causey stated.

It all started when Dr. Causey was reading about cover crops and how they are utilized in different areas of the United States. Oil seed radish has been planted in the northern states and is reported to sequester up to 200 pounds of phosphorus per acre. "South Florida Water

Management District is trying to get six tons of phosphorus sequestered, so I was curious as to how many acres it would take to make the equivalent in crops. The Water Management District is purchasing large tracts of land to sequester the same amount of phosphorus a cover crop might do in much less," Causey stated. Unfortunately the Oil seed radish is grown in the cold climate and is not compatible with Florida's weather. After quite a bit of research, it was decided that Hairy Vetch would be a great alternative cover crop.

The Hairy Vetch seed has been planted on an acre and a half of land located within the Istokpoga Marsh Watershed Improvement District. Lykes Bros. Inc. donated machinery, time and staff to help out. Wayne Zahn, Leasing Manager of Lykes Bros. Inc. as well as a former Highlands Soil and Water Conservation District Supervisor, prepared the land and planted the 150 pounds of seed in December. Soil tests have been performed and the next step will be taking samples as the crop matures to see what the optimal harvest time will be to remove the most phosphorus from the soil.

Dr. Causey stated, "We'll try it before it seeds and after it seeds. It will reseed and re-propagate itself without any replanting. If we see that there is not much difference between the amount of phosphorus sequestered with seed or without seed, then we would harvest prior to its seeding so it won't be a problem for any other crop to be planted there."

When asked why he wanted to try this project, Causey stated, "I am thinking of it from a purely economical standpoint. We don't know how much phosphorus the plant will sequester. But if we get even half the amount of the phosphorus sequestered as the Oil seed radish, we could get the same amount of six tons by planting 120 acres of Hairy Vetch. We're talking once a year at $1.00 a pound for the seed. If we could do the same amount of phosphorus sequestering with a lot less money – well, that's what we're trying to do. It's another alternative to retention ponds."

We are hopeful that the Hairy Vetch will indeed capture the required phosphorus amounts and be a successful project. Either way, the idea and initiative of the members of Highlands Soil and Water Conservation District is inspiring. As Dr. Causey says, "If we get a handle on phosphorus, who is to say, nitrogen might be the next target or potash. We could remediate the problem without spending more money on retention ponds."