

# Pigs, Trees and Greenhouse Gas

*Cedric MacLeod-Canadian Pork Council*



*One-kilometer of mature shelterbelt will sequester 250-tons of Carbon Dioxide*

What do you get when you combine a pig barn with a few rows of trees? The start of a good joke, or reduced energy consumption, odour production and greenhouse gas emissions? The answer is not a joke.

The Canadian Pork Council has teamed up with the Atlantic Swine Research Partnership, Fédération des producteurs de porcs du Québec and Ontario Pork to deliver information to Eastern and Atlantic Canadian hog producers on how to get shelterbelt plantings working for them. The Prairie Farm Rehabilitation Administration (PFRA) also works with western Canadian pork producers to get shelterbelts established on barn sites Manitoba and westward.

A shelterbelt planting is a fairly simple process and can bring a host of benefits to the farm, some with direct positive economic effects, some with societal or community benefits. Depending on the reason for a shelterbelt planting, single or multiple rows of trees can be planted around a barn. If improving the appearance of the farm site is the aim, a single row of hardwood trees and intermixed shrubs planted around the property edge might do the trick. If energy conservation and odour control are the benefits being sought, three tree-rows consisting of a row of evergreens, one row of hybrid-poplars and a third row of mixed

hardwoods and shrubs might be a good choice.

Whatever the goal of your shelterbelt planting, there will be a greenhouse gas benefit on your property. Trees, like other agricultural crops use carbon dioxide, a greenhouse gas, for growth and store it indefinitely as wood. Storing carbon in vegetation such as crop residues and trees is referred to as carbon sequestration. Agriculture has been a major focus for the Government of Canada's plan to reach our greenhouse gas reduction targets under the Kyoto protocol, because of agriculture's ability to store carbon in soil and trees. PFRA research has shown that a mature hybrid poplar tree, capable of five to seven feet of growth per year, will trap almost 1000 kg of carbon dioxide over its lifetime. A full kilometer of hybrid poplar trees, planted four-meters apart, will have sequestered approximately 250-tons of carbon dioxide at maturity. The value of carbon dioxide is currently about \$8 per ton, so the value of carbon stored in one kilometer of shelterbelt, at today's prices, is about \$2000.

Sequestering 250-tons of carbon dioxide in a shelterbelt planting may bring you some satisfaction having done your part to curb climate change, but you've still got bills to pay. So the important question is, how do efforts to plant shelterbelts affect the pocketbook? Using tree rows to shelter big energy-use buildings, such as a 600-sow farrow-to-finish hog barn, from the harsh Canadian winter has been known to reduce energy consumption by 20-30 per cent. The price of heating and powering barns is incredibly varied, but a \$40,000 annual heat bill isn't uncommon in some regions of Canada. A 25 per cent reduction in heating costs for this facility will reduce the energy bill

by \$10,000 annually, or \$0.75 per hog marketed. Reducing the electrical energy consumption by 25 per cent, if the power is being generated in coal-fire power plants, will also reduce greenhouse gas emissions by about 85 tons of carbon dioxide.

From an economic standpoint, shelterbelt plantings around hog barns are a relatively easy and cost effective measure for reducing your heat and energy bills. A portion of the planting costs can also be covered through the National Farm Stewardship Program being offered through the Government of Canada's Agricultural Policy Framework, reducing the up-front cash required to establish shelterbelts.

Besides being cost effective, shelterbelts will also significantly reduce the movement of odour off the farm site and into the surrounding community. Trees act both as a filter for odourous compounds, such as dust particles, and as a barrier to wind movement across manure storages so odours can't be picked up and moved around by wind currents. Tree plantings also give a barn site a more pleasing appearance and may help to better integrate the site into its local surroundings.

Planting trees at a hog barn site makes a lot of sense if the aim is to lower the cost of production, reduce greenhouse gas emissions or keeping the neighbor happy. For more information on planning a shelterbelt installation or financial assistance to make it happen, contact your provincial pork association office or Cedric MacLeod at the Canadian Pork Council: 506.455.6088 or macleod@cpc-ccp.com.

