

**2015 ACORN Conference & Trade Show
Delta Prince Edward Hotel, Charlottetown, PE**

Workshop Title: So You Want to go 4D: Planning Trees into your Farmscape (a closer examination of hedgerows and windbreaks)

Speaker & their title: Christopher and Hannah Buschhaus

Executive Summary:

This presentation highlighted the broad framework of 4D farming and presented some of the practical considerations of implementing on-farm agroforestry. Hedgerows and shelter belts were a focus of the discussion.

Detailed Notes

What does 4d mean? In addition to area and time, 4D includes height as a factor in habitat management and cultivation. Agroforestry then becomes part of a farm's focus.

Agroforestry can be defined as a land management approach that purposefully includes the growing of trees with crops or livestock.

Agroforestry encourages **biodiversity**. Biodiversity can be described as a composite measure of biological variation, and incorporation of species and regional diversity. Diversity can be enhanced on many levels. A composite measure examines the extent to which the mix of species is even.

Why do we even care about biodiversity? Christopher suggests that the real reasons are not as clear as we might think.

Agroforestry: as we add height we open up a greater area for living. Often we only think of buffer zones when we think of agroforestry. Integrated riparian systems are also part of agroforestry and silvopasture is another aspect of this habitat management approach. We can add animals to the area we farm to weed, fertilize, etc. Agroforestry can also include shade systems and sun systems. These are multiple aspects of agroforestry; we will focus on buffers and riparian zones in this presentation.

Buffer zones provide great habitat for pollinators and beneficials as well as winter habitat. Mind you, they also provide habitat for pests. Buffer zones dramatically reduce wind speed. The height of the trees will have a direct impact on the buffer effect. A distance of four times the height of the trees is the optimal area for the shelter effect. More than four times out the buffer effect disappears. Buffer zones work best if they are not solid but also incorporate gaps.

Hedge rows will also help with odour reduction if that is an issue for you.

Siting of hedgerows is very important. Rows should overlap at their ends so that prevailing winds do not come through large gaps. Longer rows always work better. Hedgerows will help protect waterways from erosion, provide shade and cool water. Additional revenue is also possible from buffer zones - firewood, fruit trees, etc.

When planning a fusion of field and forest, always start with a plan because all benefits cannot be achieved from a single planting. Be aware of what you really want to accomplish. Planning is crucial: think of density, longevity and establishment time. These factors will determine the kind

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of plants you will use. Typically we place the taller coniferous trees in the centre with shorter trees on either side and bushes on the edges.

How to do your own hedgerow

Use willows and poplar for self-propagation from cuttings. This is best done in the fall after the leaves drop and before frost. Cut what you can do at one time. Cuttings do not do well if left out for a couple of days. Make sure that you have at least two buds on the cutting to be planted - the more buds the better. Cut the bottom at an angle for ease of insertion and keep the ends moist.

Rooted material also works well – spruce, for example. Make sure roots are kept moist. One can pull small spruce and take the roots as well. Simply transplant these.

Maintenance: planting in rows makes it easy to mow along the edge. Make sure cuttings and transplants are watered regularly. Mulching the plants will help reduce weed pressure on recently planted hedgerows. Use bark, cardboard, landscape fabric, or any other material.

Q. Can bark mulch and cardboard be a problem for carbon levels?

A. Short term, no, but long term yes.