

# AFFORESTATION

## in Western Canada



Natural Resources  
Canada  
Canadian Forest  
Service

Ressources naturelles  
Canada  
Service canadien  
des forêts



### What is Afforestation?

*Afforestation is the establishment of tree plantations on agricultural land that has not been previously managed for forests for at least 12 years. Emphasis is placed on maximizing the use of available land and resources with high yield species, with the objective of producing yields 8-10 times greater than rates associated with the commercial natural forests. Trees can either be of similar species or mixed in a manner that will result in a stand or forest.*

### Afforestation and the Hog Industry

Potentially less land and closer proximity to barn required for manure application

Tree plantations act as a shelterbelt/windbreak, thereby potentially reducing odours generated in the vicinity of the production facility

Create additional value added opportunities within the immediate area of the production facility such as future wood fibre harvest



What kinds of trees have the greatest growth potential in Western Canada?

- Hybrid poplar
- Spruce
- Pine
- Larch

How fast will they grow?

Site selection will play an important role in determining the growth pattern of tree plantations. However, fast-growing hardwood species like hybrid poplar can mature in 20 years after establishment. At maturity they will measure 20 m (66') tall and 30 cm (12") in diameter, at breast height.

Conifers will mature in 50-60 years after establishment. At maturity they will measure approximately 20 m (66') in height and 25 cm (10") in diameter at breast height.

How many trees are planted per hectare/acre?

- 1,100 - 2,000 stems/hectare
- 445 - 809 stems/acre

What are the costs associated with establishment and maintenance of a fast-growing plantation?

- \$1,500 - \$3,000 /hectare
- \$607 - \$1,214 /acre

How large an area do I need to plant?

In order to be commercially viable a plantation should be at least 8 hectares, or 20 acres, although as little as 0.5 hectares, or 1.25 acres, classifies as afforestation.

How many trees does it take to sink a tonne of carbon from the atmosphere?

Six to eight mature trees (20 years old) are required to sink a tonne of carbon. Therefore, one hectare of trees can sequester approximately 150 mt of carbon.

#### Site Selection Guidelines

- Soil texture: loams, silty clay, silty sand, and sandy clay
- Moderately well drained to rapidly drained
- pH of 5.0 to 8.0
- Non-saline
- Light stoniness (surface boulders, bed-rock, and cobble should be avoided)
- Flat to gently rolling topography
- Annual precipitation of 380 mm or 15"

#### Site Preparation

##### *Autumn prior to planting*

- A broadcast Glyphosate application if the area was previously used for cropping practices
- Tilled (deep disced) to a depth of 30 cm (12"). The discing process should be completed using two passes, in which the second pass is carried out in a perpendicular direction to the first pass
- Three weeks following the deep discing, a shallow discing or harrowing should be completed, creating a more level and mixed surface



##### *At Spring Planting*

- A broadcast Glyphosate application following the first flush of weeds
- Tree position marking. Trees should be marked in straight parallel rows, perpendicular to the primary access route

*The preceding information on site selection and recommended practices were developed for agricultural lands, that at a minimum have not been forested for at least 12 years. Recommended afforestation practices are intended as guidelines, specific practices will depend on the condition and previous management of the site.*

## Prairie Swine Centre

Box 21057, 2105 8th Street East  
Saskatoon, Saskatchewan S7H 5N9  
Phone: (306) 373-9922  
Fax: (306) 955-2510



Prairie Swine Centre is an affiliate of

