

Willows and poplars as agroforestry system breaking wind speed and catching biogen elements

Dagnija Lazdiņa, Sindija Žīgure, Kārlis Dūmiņš, Viktorija Vendiņa,
Toms Arturs Štāls, Kristaps Makovskis

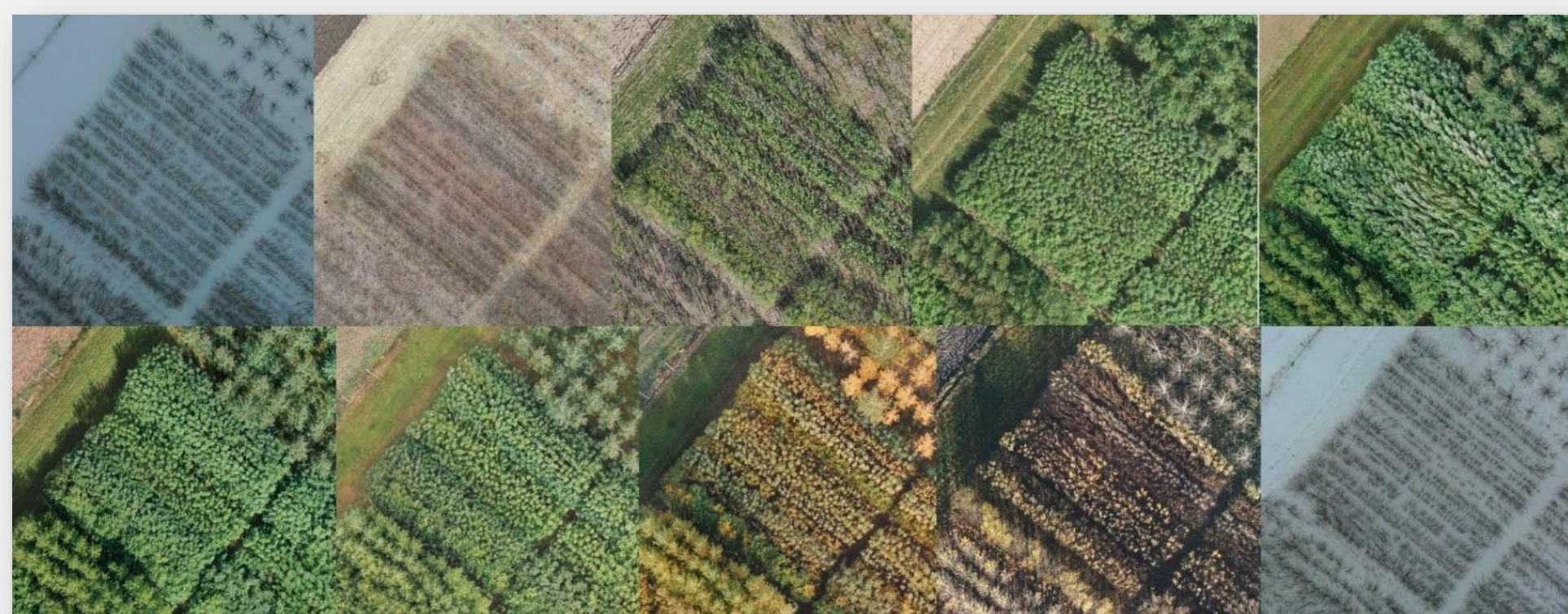
Latvian State Forest Research Institute «Silava», Rīga str. 111, Salaspils, LV-2169, Latvia

Introduction

In order for the established buffer strip, that the strips of trees and shrubs intended for absorbing nutrients, fit well into the landscape and have a positive effect on the growing conditions of crops grown in the fields, the principles of landscape and windbreak operation must also be taken into account.

For the establishment of buffer strips, trees should be selected that reproduce and actively use plant nutrients available in the soil.

Such peculiarities are found in the short rotation coppice of willow and poplar genera clones.



Methodology

In the demonstration objects of short-cut seedlings, the time of flowering of the willow leaves, the tone of the leaves during the vegetation season, the length of the vegetation period - the relative time of leaf shedding, the density/thickness of the bush, the height of trees or bushes were evaluated. The gender of the clone is also a significant factor in avoiding seed fluff.

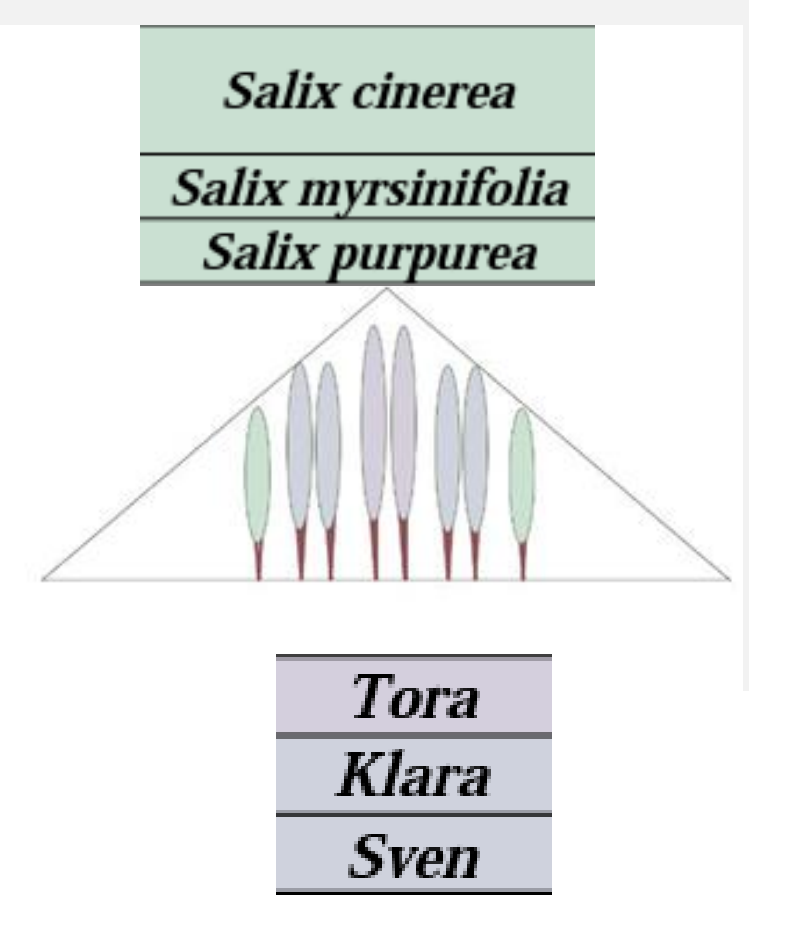
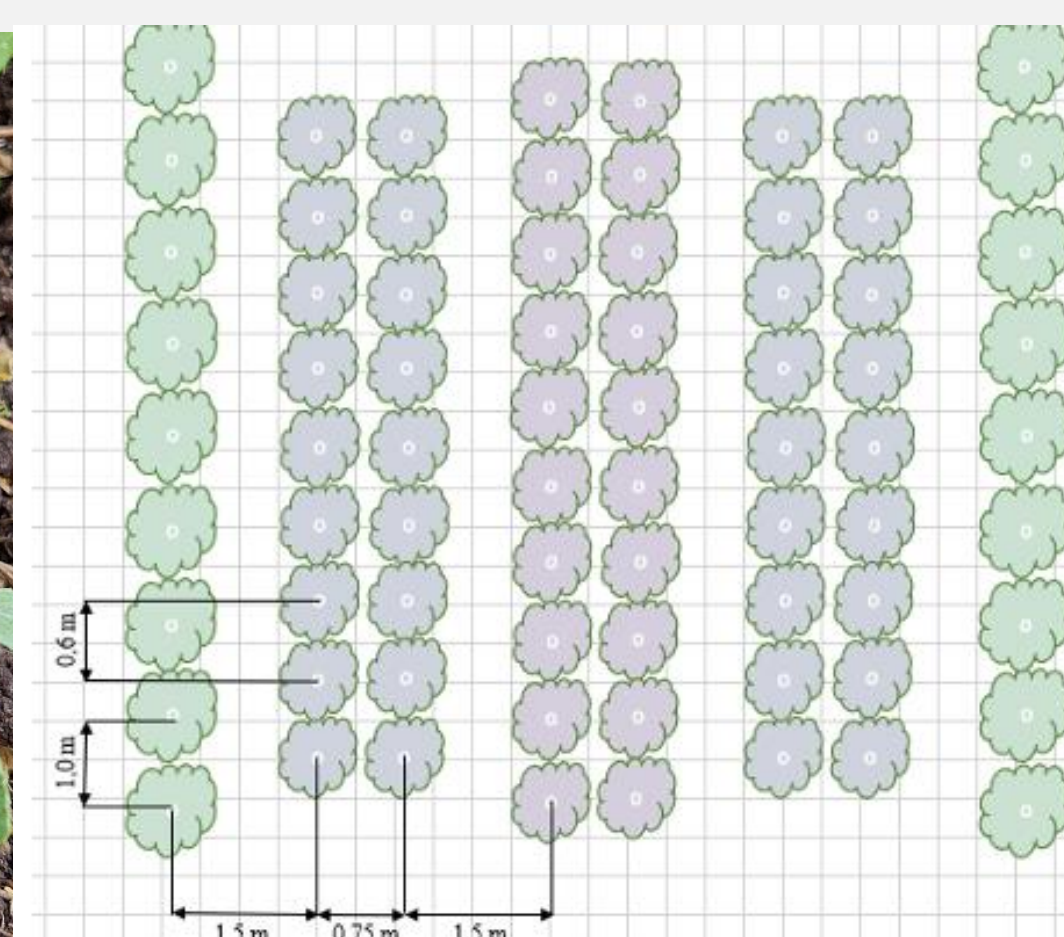
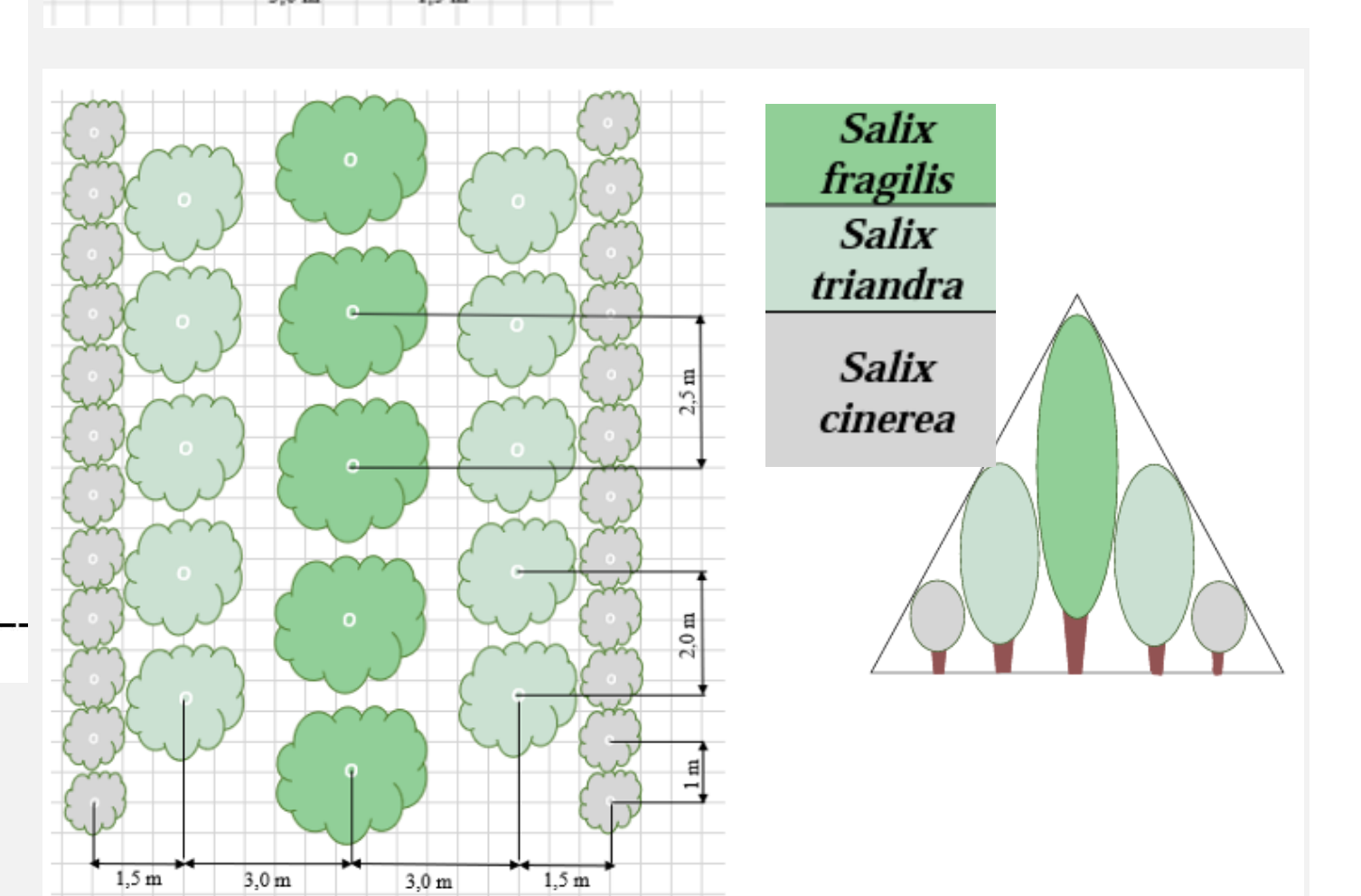
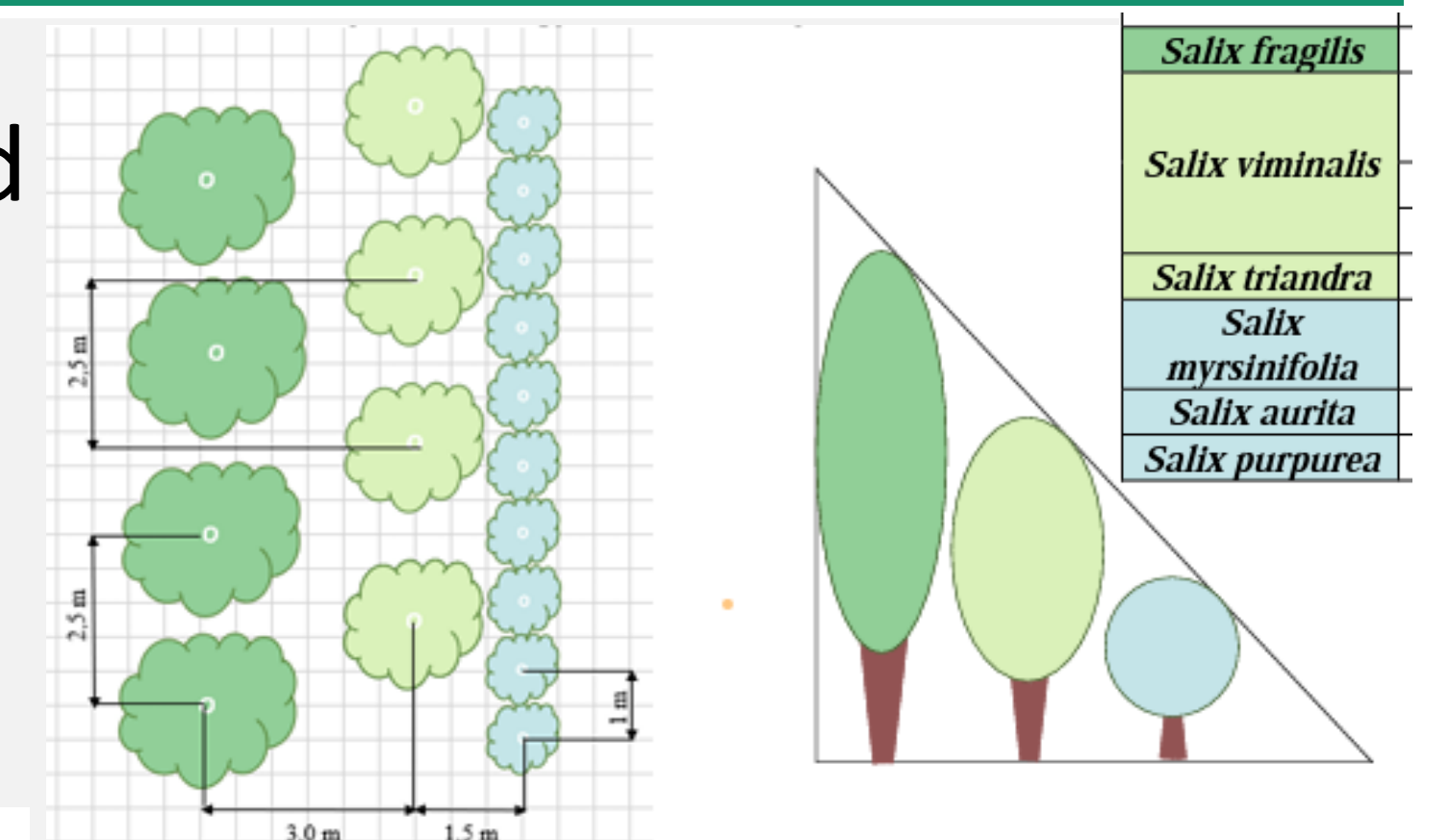
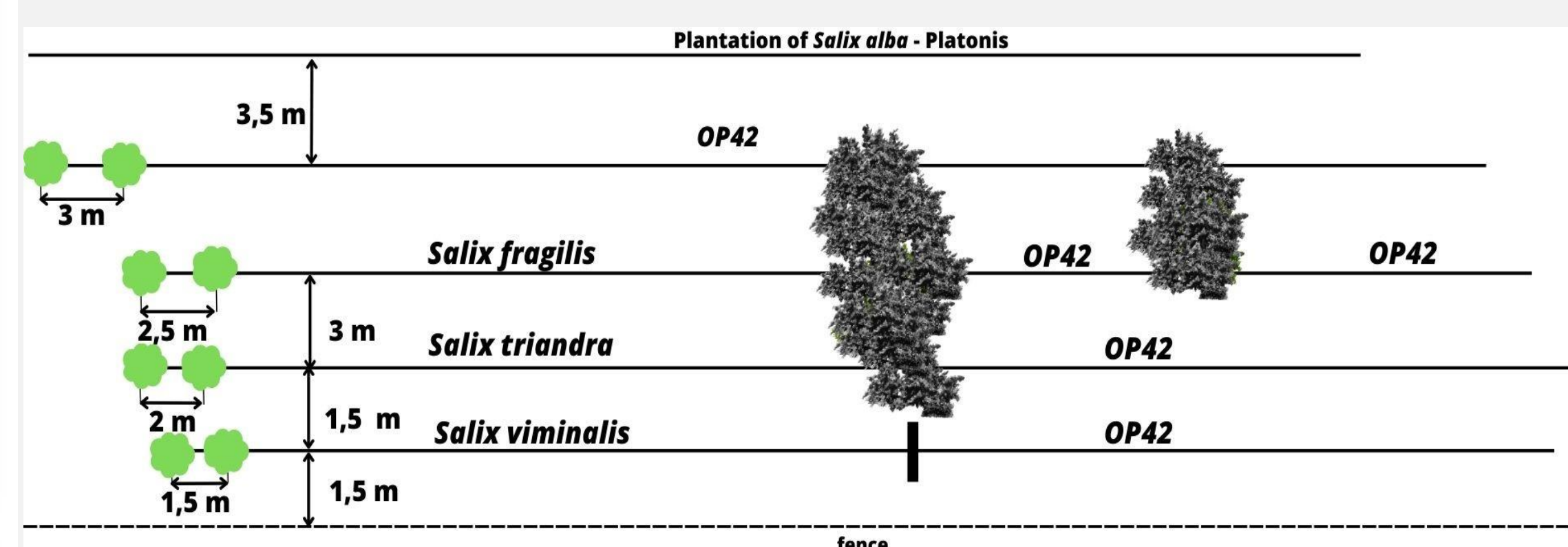


Value	Characteristics of phenology			
	Leaf bloom	Leaf color tone	Deciduous	Density
1	late	green	early	low
2	late-average	green-yellow	early-average	low-average
3	average	green-silver	average	average
4	average-early	-	average-late	Average-high
5	early	-	late	high

Commercial clone	Phenological characteristics of commercial clones			
	Leaf bloom	Leaf color tone	Deciduous	Density
Sven	3	3	5	3
Klara	5	1	3	2
Inger	2	3	4	2
Gundrun	4	3	4	4
Lisa	2	2	3	1
Tora	4	2	3	4
Stina	2	1	3	2
Viminalis	3	1	2	3
Swerini	2	3	4	4
Burjatica	4	2	1	4
Purpurea	5	2	5	5

Results

Prepared models and clones should be planted in symmetrical and asymmetrical buffer strips. A trial - demo planting has been installed.



Main conclusions:

1. Representatives of the *Salicea* family are grateful tree species for buffer strips: fast-growing, forming various forms from a small bush (*Salix viminalis*) to large trees (*Salix fragilis*, *Salix alba*).
2. Tree species of the *Salicea* family not only perform wind/snow protection functions, but also purify the soil from various chemical elements and their developed root system prevents soil erosion.
3. The existence of buffer strips increases biodiversity by creating a habitat for various wildlife species. Bees serve as the first place to collect nectar, and provide nesting and feeding places for birds.