numeri notizieingrafica illustrazioni

PROJECTS AND NEWS TOLD THROUGH NUMBERS, GRAPHICS AND ILLUSTRATIONS

edited by **Luigi Torreggiani** - graphic design by **Maria Cristina Viara**

Selective thinning in artificial black pine plantations

SelPiBio Life

LIFE13 BIO/IT/000282

Prodotto realizzato con il contributo dello strumento finanziario LIFE dell'UE

The technical handobook "Selective thinning. Increasing mechanical stability and biodiversity in black pine plantations" has been recently published in the framewrok of the LIFE SelPiBio project (***www.selpibio.eu/en***). The purpose of this handbook is to increase the current knowledge about the selective thinning approach, an innovative treatment known to improve the mechanical stability of trees, the timber production and the biodiversity in artificial black pine plantations in the Italian Apennines chain. The selective technique is one of the most promising and interesting tool for dense artificial plantations (closed canopy cover). In this book a brief historical description of the Italian artificial pinewoods is also provided as well as a brief summary of some research activities on them. The study areas where the LIFE SelPiBio project is developed are described: the Monte Amiata (province of Siena) and Pratomagno (province of Arezzo). In the present infographic the main steps of the selective thinning approach are reported: an interesting technique , simple and effective for artificial black pine plantations not or rarely thinned in the past.

REQUIREMENTS

Is thinning from below really effective?

35%
Mortality at age 30-45 in unthinned artificial pinewoods

30%
Average allowed cutting ratio in case of the first thinning from below

An hypothetical classic thinning from below at age 30, applied following the Regional laws, would remove just the trees which would have died in the following 15 years for natural competition.

A NEW MANAGEMENT STRATEGY IS MANDATORY FOR ARTIFICIAL PINEWOODS

Which forests are the most suitable for the application of the selective thinning?

- **ARTIFICIAL BLACK PINE** PLANTATIONS
- AGE **30-50 YEARS**
- UNTHINNED PLANTATIONS OR TREATED **WITH ONLY AN EARLY THINNING FROM BELOW**

Why the selective treatment?

3 MAIN AIMS

- TO IMPROVE THE **OVERALL MECHANICAL** STABILITY OF TREES (PROTECTION)
- TO INCREASE **GROWTH TRENDS OF TREES** (WOOD PRODUCTION)
- TO DIFFERENTIATE THE **STRUCTURE OF THE FOREST** (VERTICAL AND HORIZONTAL) WITH MORE **SOLAR RADIATION ON THE SOIL** (BIODIVERSITY)

SELECTIVE THINNING - THE TECHNIQUE

1 Selection of CANDIDATE TREES

HOW MANY and WHERE

100 Candidate trees ha^{-1}

10 metres Average horizontal distance between them

2 Tree stability evaluation METHODS

MAIN SKILLS

- Vitality
- No mechanical weakness or illnesses
- Regular distribution of the crown, straight and vertical stem
- Mechanical stability

"Common" method
The slenderness ratio (HD)
If total height (m)
diameter (cm)
< 90

A black pine can be considered as stable under a mechanical point of view

"Fast "method
Living whorls number (LWN)
If LWN
>16

2 Removal of the candidate's NATURAL COMPETITORS

Around the candidates we cut:

Dominants and codominats trees
whose crowns are in contact with the candidate's crown
(aim: protection and production)

Dominated
Just to increase the amount of solar radiation on the soil
(aim: biodiversity)

3 What about AFTER the selective thinning?

Further thinnings
When the crowns of the surrounding trees will reach the candidate trees (contact) a new thinning will be applied

The final "population"
This method will be performed iteratively until when just 100 trees per hectare (candidates) will remain (approximately a mature black pine has 5 metres of crown radius)

APP The selective thinning technique is described with a short video, prepeared during the SelPiBio Life project
Link *https://youtu.be/l3IROYj2ZJY*

Sherwood | 224 Gennaio - Febbraio 2017