



ARACNE:

“ADVOCATING THE ROLE OF SILK ART AND CULTURAL HERITAGE AT NATIONAL AND EUROPEAN SCALE”



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Deliverable 1.3

Guidance model to collect mulberry samples

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Abstract

This document provides a guidance model about the importance of the collecting process of the mulberry samples. It also illustrates the rules about the tree preservation and provides a general guide for tree protection.

It includes a specification guide and manual to correctly use the *Morus sp. census application*. The guide shows how to use this application in order to help the user to enter and list specimens of mulberry trees found in the field throughout Europe.

This guide and manual will be of support both for the schools' activities as well as for the preparatory phase of mulberry samples collection. These activities are necessary to develop the knowledge bank for the benefit of the European Silk Innovation Ecosystem which is one of the main objectives of the ARACNE project.

Partners involved in the document

Participant n.	Participant organisation name	Short name	Check if involved
1 Coordinator	Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria	CREA	X
2	Iniziativa Cube S.r.l.	INI	
3	LepI State Silk Museum	SSM	
4	Nauchen Tsentar Po Bubarstvo Vratsa	SCS	
5	Piraeus Bank Group Cultural Foundation	PIOP	
6	Univerza V Mariboru	UM	X
7	Ethniko Kai Kapodistriako Panepistimio Athinon	NKUA	
8	Instituto Murciano de Investigacion y Desarrollo Agrario y Medioambiental (IMIDA)	IMIDA	
9	D'orica S.r.l. Società Benefit	DOR	
10	Chemins De La Soie - Des Cevennes aux Alpujarras	ASSOIE	
11	Sericyne	SER	
12	Universita degli Studi di Padova	UNIPD	
13	Council Of Europe - Conseil de L'europe	COE	
14	Mouseio Technis Metaxiou	ASMS	

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1. Description of the project

ARACNE project focuses on the cultural heritage of the European silk production and its preservation, protection and valorisation; it aims at reinvigorating traditional skills through the adaptive reuse of the common cultural and artistic legacy and at shaping a silk-linked European cultural identity.

The production and the past and present development of the silk sector can be again the common basis for a future European Silk Route intended as a cultural itinerary across Europe. To create a wide and well-connected network that, starting from the historical path followed by Marco Polo in his travels to East, even includes the routes of production and commercialization of silk in Europe in the following centuries, we aim to:

- ❖ Bring back silk production in vogue by reconstructing a resilient and innovative silk ecosystem that retraces the concerned European countries and promotes traditions, architecture, and both tangible and intangible heritages. The consolidation of a European Silk Route will encourage links and shared activities among European cities and regions to strengthen the preservation and protection of their culture and promote innovations in production and trade;
- ❖ Contribute to improve skills and competitiveness of silk-related European Cultural and Creative Industries through the renewal, co-development and the implementation of human-centered and place-specific silk-based cultural products, processes and service innovations, leveraging on digital applications and cutting-edge technologies, to foster the transition to more sustainable business models, and promote economic and social growth, and strengthen the reputation of European countries abroad.

1.1 ARACNE specific objectives

The overarching goal of ARACNE is to create a wide and well-connected Silk Innovation Ecosystem that, starting from the historical path followed by Marco Polo in his travels to East, also includes the routes of production and commercialization of silk in Europe in the following centuries. An innovation ecosystem is an interconnected network of quadruple helix stakeholders, including academia, industry and different levels of the public sector and civil society. This multi-level approach applies a systemic and bottom-up approach to creating research, innovation and knowledge. Silk Innovation Ecosystem includes every stakeholder and innovator in the cultural silk value chain even if not participating directly in the project activities. The production and, more in general, the past and present development of the silk sector in the ARACNE Consortium countries represent the common thread for the future “European Silk Route” as a cultural itinerary across Europe, to boost the European values in relation to the silk arts and CH for the benefit, prosperity, peace of our societies. To this aim, the project will explore the CCIs’ capacities to create a cultural and artistic niche market where silk produced within EU boundaries will be valued as a distinct immaterial asset; on the other hand, the ambition is to contribute to stop the loss of technical, traditional and

cultural know-how and skills that accompanied the decline of this fiber production and that is detrimental exactly to those CCI's which might be active in fashion, art, design and product communication. In fact, the so-called "Silk Road" is generally associated to its Asian origin; however, its European ramifications were fundamental for the development of Europe as we know it today. More in general, the silk production (silkworm rearing, mulberry cultivation, silk reeling), originated from Asia but subsequently spread to Europe and developed strongly in the Mediterranean and Balkan regions. Bringing back silk production in vogue by reconstructing a resilient and innovative Silk Route that retraces the European countries and enhances traditions, architecture, tangible, and intangible heritage will demonstrate that silk, as a cultural legacy, can contribute to develop the European economy and enrich our society. In this context, ARACNE covers several sectors linked to content creation, conservation, exploitation, management, fruition, diffusion related to the silk historical, artistic and environmental resources and assets. The ambition of ARACNE will be reached through a set of specific, measurable, achievable, realistic and time-constrained (SMART) specific objectives:

Objective 1: Enhancement of knowledge and memory for the renaissance of a European Silk Innovation Ecosystem;

Objective 2: Co-creation of human-centred and place specific creative silk-based solutions leveraging on digital and cutting-edge technologies;

Objective 3: Implementation of innovative strategies and business, governance and financing models for the involved CCI's organisations and SMEs, building on previous research;

Objective 4: Support the establishment of a cultural European Silk Route, based on the tangible and intangible silk cultural heritage and landscapes;

Objective 5: Raise awareness of ARACNE results and impacts among different stakeholders of the territories and CCI's of the silk sector and raise the expectation for the constitution of a European Silk Route in support to the European silk CH and silk CCI's;

Objective 6: Enhance the European cultural identity and strengthen European competitiveness for a more resilient post-crisis society;

Objective 7: Contribution to the European Green Deal, the New European Bauhaus and the Sustainable Development Goals.

2. Introduction

2.1 Objective of the deliverable

This deliverable provides a guidance model about the importance of the collecting process of the mulberry samples. It also illustrates the rules about the tree preservation and provides a general guide for tree protection.

Moreover, it includes a specification guide and manual to correctly use the *Morus sp. census application*. The guide shows how to use this application in order to help the user to enter and list specimens of mulberry trees found in the field throughout Europe. This guide and manual will be of support both for the schools' activities as well as for the preparatory phase of mulberry samples collection.

This deliverable is an important part of the Work package n.1 – Development of the knowledge bank for the benefit of the European Silk Innovation Ecosystem – which aims to build the project knowledge bank for the Silk Innovation Ecosystems in Cevennes, Murcia, Padua, Soufli, Tbilisi, Vratsa, and in the context of the European Neighbourhood Policy for a better understanding of European silk-related arts, culture, genetics, landscape, production, industrial and built heritage and values.

2.2 Document structure

The following document is organized into five different chapters:

1. Description of the project;
2. Sampling for shoot descriptions and woody cuttings establishment;
3. Tree Preservation Rules;
4. General guide for tree protection;
5. Guide and manual to correctly use the *Morus sp. census application*

Acronyms are provided at the end of the document.

3. Sampling for shoot descriptors and woody cuttings establishment

Sampling of old mulberry cultivars for propagation of woody cuttings or grafting should be done in late January and February at the bud dormancy stage. The swollen bud stage is no longer suitable for vegetative propagation or grafting. Preferably, old local mulberry trees with a circumference of > 300 cm should be taken.

Shoots from the current year (annual) with dormant (non-swollen) buds should be taken directly at the shoot base. The best rooting success is achieved with shoots 0.8-1.5 cm in diameter.

The recommended shoot size corresponds to the length of 6 internodes (at least 4 internodes) from the shoot base.



Figure 1 - Example of shoots with 0.8-1.5 cm in diameter (left). Example of poor vigour annual shoots (right).

Remark: Unpruned trees or trees with low vigour or low annual shoot length / diameter are less suitable for propagation by woody-cuttings and should be propagated by preparing green cuttings at the end of June.



Figure 2 - Sealing of cut edges with grafting wax.

The amount of plant material to be supplied by the partner is 5-10 shoots per genotype. Shoots should be visibly healthy and not affected by any important pest or disease.

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The cut surfaces should be sealed with grafting wax and thoroughly wrapped with stretch foil and additionally the whole material should be wrapped with another layer of bubble foil.

The material should be marked with the same identification number as entered in the application - *MorusAPP*.



Figure 3 - Wrapping with stretch foil.

Please make two different dispatches with the same genotypes and send the material to the addresses of UM and CREA below:

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4. Tree Preservation Rules

A Tree Preservation Order is an order made by a local planning authority at national level to protect specific trees, groups of trees or woodland in the interests of amenity. Natural values are defined and protected by national regulations, not by the EU.

General protection guidelines for the implementation of interventions and activities related to natural values are laid down in the Regulation on Types of Natural Resources (for Slovenia: <http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED2354>).

More detailed protection guidelines for natural values are set out in the Regulation on Identification and Protection of Natural Resources (for Slovenia: <http://www.pisrs.si/Pis.web/pregledPredpisa?id=PRAV6035>).

The most important criterion for the classification of a tree in the register of natural values is the circumference of the trunk (CBH, circumference at breast height). The criterion diameter/height by tree species is defined by the internal rules, which are elaborated in cooperation with several experts at the national level. In addition to diameter, the criteria are tree height, age, exceptional habitus, ecosystem and scientific research, and importance for cultural heritage. It is considered that the thickness of the tree or its height are of crucial importance and the criterion circumference and height can be reduced by 20 (30) % if the other criteria are expressed and recognised.

In the case of Slovenia, the regional unit of the Institute for Nature Conservation proposes the trees for inclusion in the Register of natural values of Slovenia, the proposal is first approved by the central unit of the INC, followed by the Ministry.

Trees in the form of mulberry plantations and rows can generally have the status of a natural value, in which case the dimensions of the trees are of secondary importance. Most parks/tree rows are under the auspices of the Institute for the Protection of Cultural Heritage of the Republic of Slovenia. For both species, the black and the white mulberry, the trunk circumference of 315 cm is currently considered the limiting criterion for registration as a tree of natural value.

5. General guide for tree protection

During the inventory, check whether trees with a trunk circumference of > 300 cm are protected by a tree protection ordinance. We need to make owners aware of why old mulberry trees are important.

- ❖ General guideline for owners of old mulberry trees:
 - Trees with poor growth should be preserved if possible, including dead trees.
 - Consider alternatives, such as reducing the tree canopy, before making a decision that may result in a century-old tree being felled.
 - Owners should leave fallen branches and use them to protect trunks and roots from stock.
 - Aim for a population of trees of different ages to create a sustainable supply of ancient trees for the future.
 - Plant more mulberry trees of local origin, adapted to the site while respecting historical features and landscaping.
 - Mark and protect new trees in hedgerows.

There are volunteer groups or local community organisations and arborists who can help with conservation.

The loss of historic mulberry trees seems to be very high in some places, leading to general genetic erosion. Therefore, we should work towards planting new generations of old tree descendants. Every single remaining old tree is important. and the replacement of trees is essential.

Old mulberry trees are historical landmarks and give local character to many of our most valuable landscapes, therefore their preservation should be of great importance to local as well as to national society.

ACRONYMS

[CBH] Circumference at breast height

[INC] Institute for Nature Conservation

ANNEX: Specification guide and manual to correctly use the Morus sp. Census application