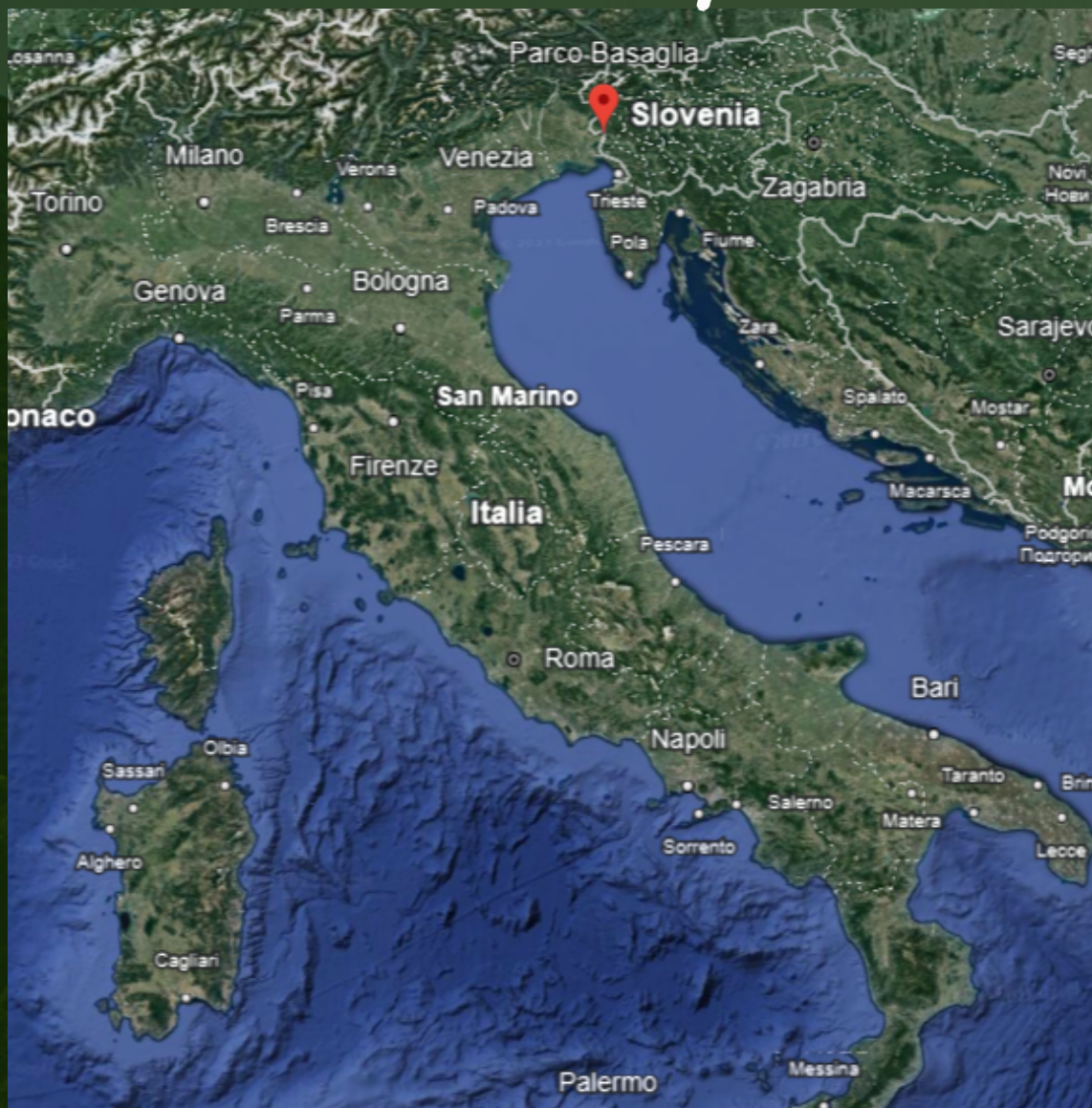


EUROPEAN PHENOLOGY CAMPAIGN

GREEN DOWN
2023-2024





**ITALY - FRIULI VENEZIA GIULIA
GORIZIA**



SITE LOCATION

LAT: 45.93342 N LONG: 13.63210 E

Elevation: 77 m a.m.l.s.

FRANCO BASAGLIA PARK - GORIZIA

The Basaglia urban Park was born such as a large garden annexed to the ex Provincial Psychiatric Hospital and dedicate to Dr. Basaglia, a famous promoter of the new psychiatry (1969). In this area there are almost 600 trees, both deciduous and evergreen, of different ages (some centenary species) and several shrubs. There is also a rich fauna: it is the ideal habitat for squirrels, woodpeckers and hares.

CARDINAL POINTS

North



West



South

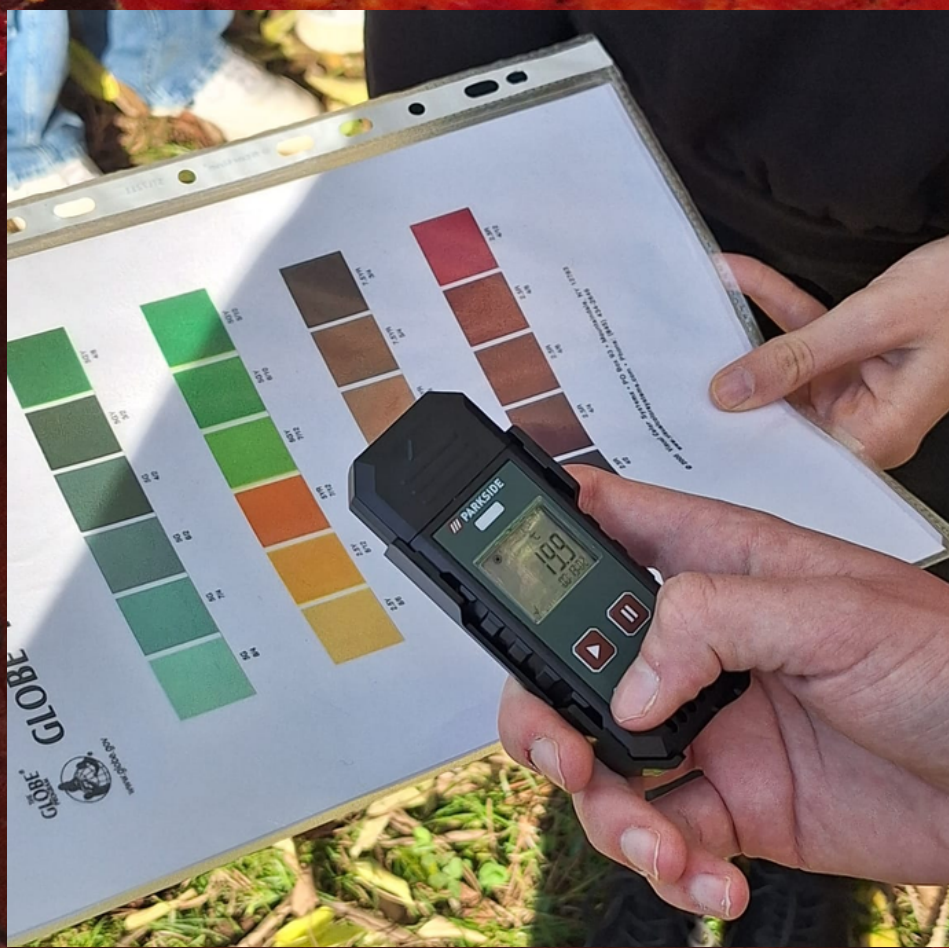


East

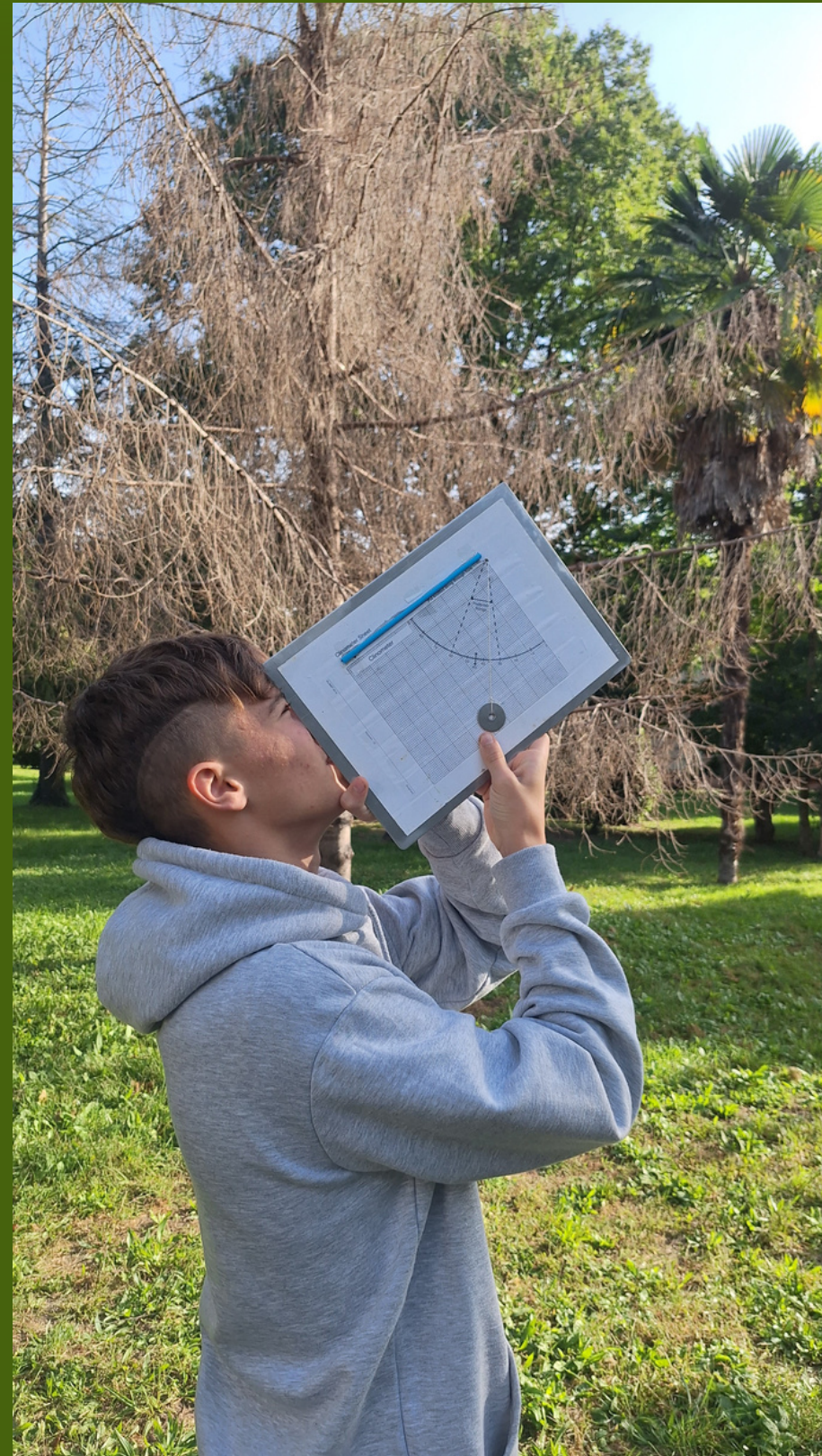


A cluster of autumn leaves in various colors (green, yellow, orange, red) arranged in a star-like pattern against a black background. The leaves are of different shapes and sizes, some showing signs of aging and discoloration. The colors range from bright green to deep red, with some leaves showing a mix of colors. The leaves are arranged in a circular pattern, with some pointing outwards and others pointing inwards, creating a star-like shape. The background is a solid black, which makes the colors of the leaves stand out.

A row of approximately ten leaves is laid out horizontally on a dark, textured surface. The leaves exhibit a clear color gradient from left to right, starting with green on the far left and transitioning through yellow, orange, and finally to a vibrant red on the far right. This visual sequence represents the seasonal change in leaf pigmentation, where the breakdown of green chlorophyll reveals other pigments like carotenoids and anthocyanins.



...AND WHAT ABOUT US?



Tilia europea

Linden

(Malvaceae)



13/10/2023



16/10/2023



30/10/2023



09/11/2023



date	leaf 1 (Color, fallen, snow covered)	leaf 2 (Color, fallen, snow covered)	leaf 3 (Color, fallen, snow covered)	leaf 4 (Color, fallen, snow covered)
09/10/2023	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10
13/10/2023	5GY 5/10	5GY 5/10	5GY 7/12	5GY 7/12
16/10/2023	5GY 4/8	5GY 5/10	25Y 6/6	5GY 4/8
20/10/2023	5GY 5/10	5GY 5/10	5GY 4/8	5GY 6/10
23/10/2023	5GY 4/8	5GY 5/10	5GY 3/2	5GY 5/10
27/10/2023	5GY 5/10	5GY 4/8	5GY 3/2	5GY 4/8
30/10/2023	5GY 5/10	5GY 5/10	FALL	5GY 4/8
07/11/2023	5GY 4/8	5GY 5/10	FALL	25Y 8/12
09/11/2023	5GY 4/8	5GY 4/8	FALL	25Y 8/12
14/11/2023	25Y 6/6	25Y 6/6	FALL	FALL
21/11/2023	FALL	25Y 8/6	FALL	FALL

FAGUS SYLVATICA

- **FAMILY: FAGACEAE**
- **COMMON NAME:
WILD BEECH**



	LEAF 1	LEAF 2	LEAF 3	LEAF 4
09\10\2023	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
13\10\2023	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
16\10\2023	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
20\10\2023	5 Y 8/4	5 Y 8/4	5 Y 8/4	5 Y 8/4
23\10\23	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
27\10\2023	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
30\10\2023	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
06\11\2023	2,5 Y 6/6	2,5 Y 6/6	5 Y 8/4	2,5 Y 6/6
07\11\2023	2,5 Y 6/6	2,5 Y 6/6	FALLEN LEAF	2,5 Y 6/6
09\11\2023	2,5 Y 6/6	2,5 Y 6/6	FALLEN LEAF	2,5 Y 6/6
14\11\2023	2,5 Y 6/6	2,5 Y 6/6	FALLEN LEAF	2,5 Y 6/6



06/11/2023

16/10/2023



14/11/2023

Corylus avellana

Hazelnut

Family: Betulaceae



LEAVES GREEN-DOWN				
DATE	LEAF 1	LEAF 2	LEAF 3	LEAF 4
09/10	5GY 7/12	5GY 7/12	5GY 7/12	5GY 7/12
16/10	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
20/10	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
23/10	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6	2,5 Y 6/6
27/10	2,5 Y 6/6	2,5 Y 6/6	fall	2,5 Y 6/6
30/10	2,5 Y 6/6	2,5 Y 6/6	fall	2,5 Y 6/6
06/11	2,5 Y 6/6	2,5 Y 6/6	fall	2,5 Y 6/6
07/11	2,5 Y 6/6	2,5 Y 6/6	fall	2,5 Y 6/6
14/11	2,5 6/6	2,5 6/6	fall	2,5 6/6



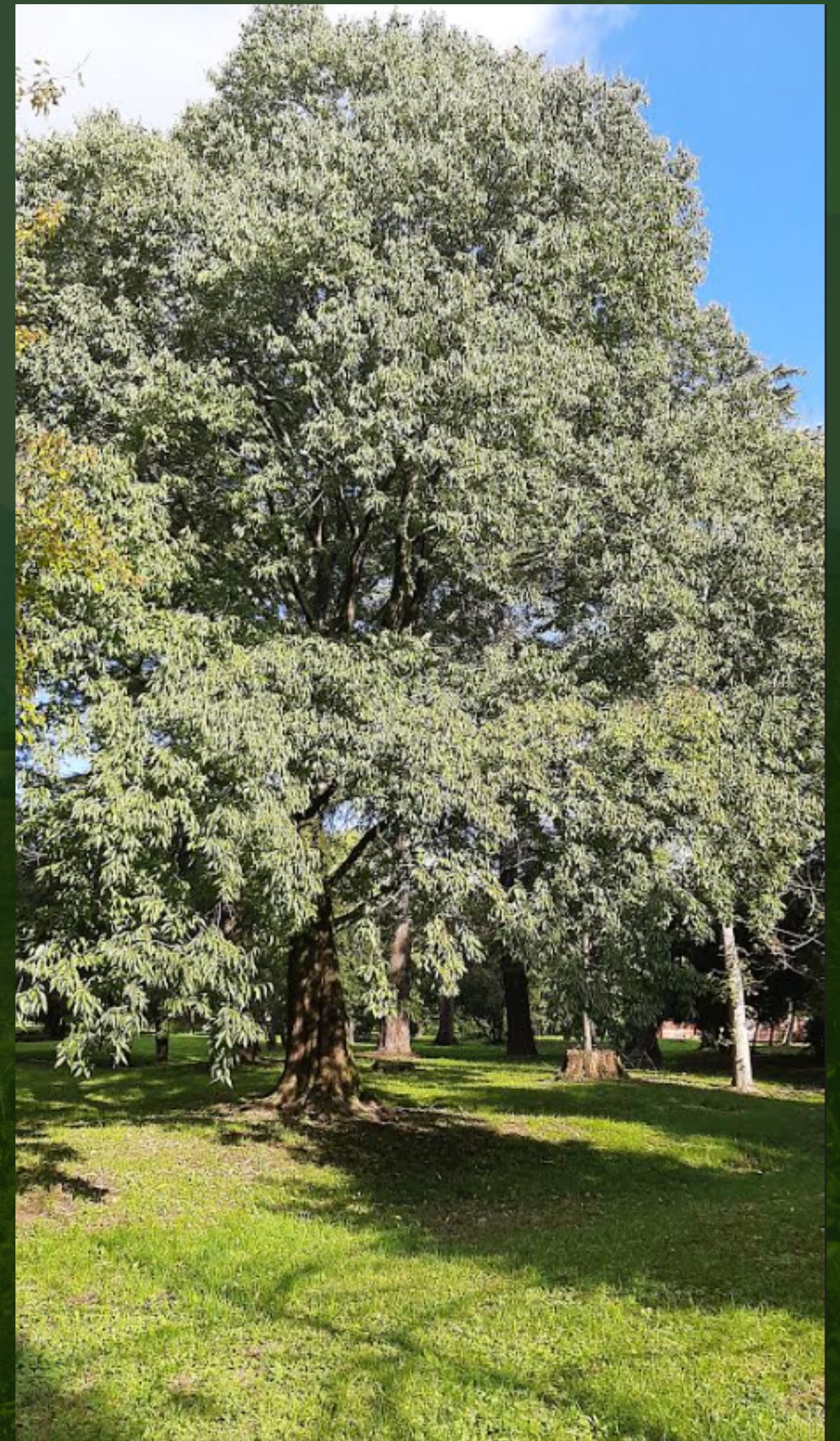
27/10/23



14/11/23

HACKBERRY

- **Scientific name: *Celtis australis***
- **Common name: Hackberry**
- **Family: Cannabaceae**



COLORS OF LEAVES

Date	FIRST SAMPLE	SECOND SAMPLE	THIRD SAMPLE	FOURTH SAMPLE
09/10/2023	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10
13/10/2023	5GY 6/10	5GY 6/10	5GY 6/10	5GY 6/10
16/10/2023	5GY 6/10	5GY 6/10	5GY 6/10	5GY 6/10
20/10/2023	5GY 6/10	5GY 6/10	5GY 6/10	5GY 6/10
23/10/2023	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10
27/10/2023	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10
30/10/2023	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10
06/11/2023	5GY 6/10	5GY 6/10	5GY 6/10	5GY 6/10
07/11/2023	5GY 6/10	5GY 6/10	5GY 6/10	5GY 6/10
09/11/2023	7.5YR 6/4	7.5YR 6/4	5GY 6/10	5GY 6/10
14/11/2023	2.5Y 8/6	2.5Y 8/6	5GY 6/10	5GY 6/10
21/11/2023	FALLEN	FALLEN	FALLEN	5GY 7/12



23/10/23



30/10/23



15/11/23

Acer pseudoplatanus (Mountain Maple)



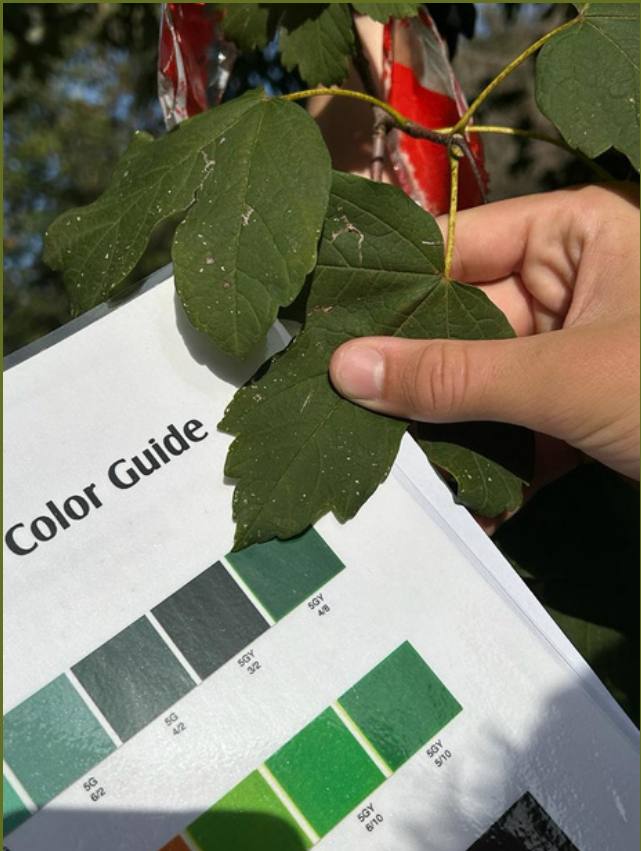
Family: Sapindaceae

Colors of leaves

date (day & moth)	leaf 1	leaf 2	leaf 3	leaf 4	T
09/10/23	5GY 4/8	5GY 4/8	5GY 4/8	5GY 4/8	24,5°C
13/10/23	5GY 4/8	5GY 4/8	5GY 4/8	5GY 4/8	28,8°C
16/10/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	20,0°C
20/10/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	23,3°C
23/10/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	21,7°C
27/10/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	20,2°C
30/10/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	20,0°C
06/11/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	18,4°C
07/11/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	16,5°C
09/11/23	5GY 5/10	5GY 5/10	5GY 5/10	5GY 5/10	14,8°C



09/10/2023



13/10/2023



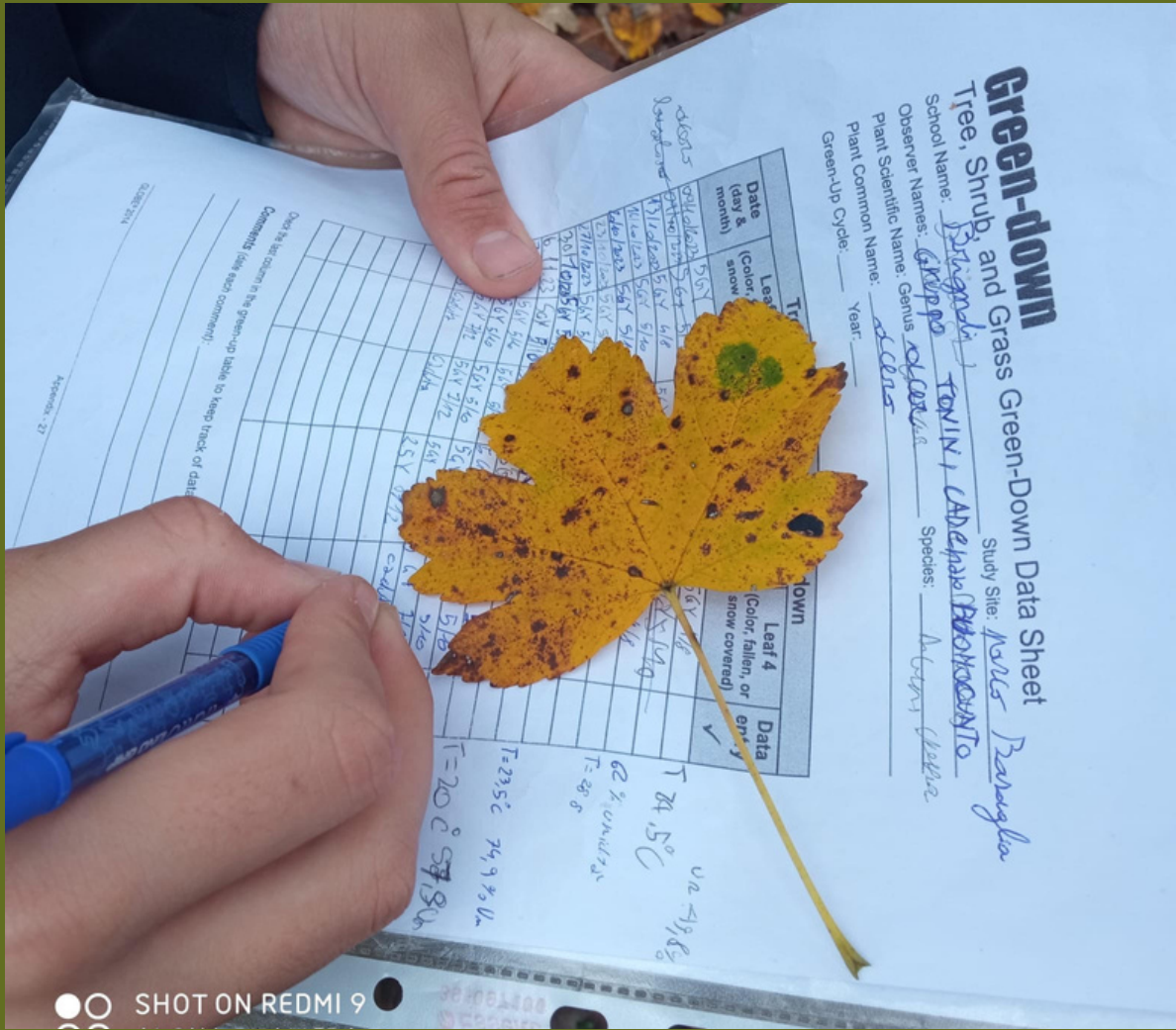
14/11/2023



14/11/23	5GY 7/12	5GY 7/12	5GY 7/12	5GY 7/12	13°C
21/11/23	fall	fall	2.5Y 8/12	fall	13,7°C



21/11/23



21/11/23

TREES BIOMASS

First Method:

Latin/ Common Name	Tree Circumference (cm)	DBH (cm)	Aboveground Dry Biomass (kg)	Trapped CO2 (t)
Tilia europea/ Linden	200	64	2532	4,6
Fagus sylvatica/ Wild Beech	57	18	155	0,3
Celtis australis/ Hackberry	312	99	7639	14,0
Acer pseudoplatanus/ Mountain Maple	56	18	148	0,3

Biomass = exp (B0 + B1 ln DBH)

Highwood Density Species:

Maple/Oak
B0= -2,0127 B1 = 2,4342

Mediumwood Density Species:

Mixed Hardwood B0 = -2,40 B1
=2,4835



TREES BIOMASS

Second method:

Hardwoods: $d = 700 \text{ Kg/m}^3$

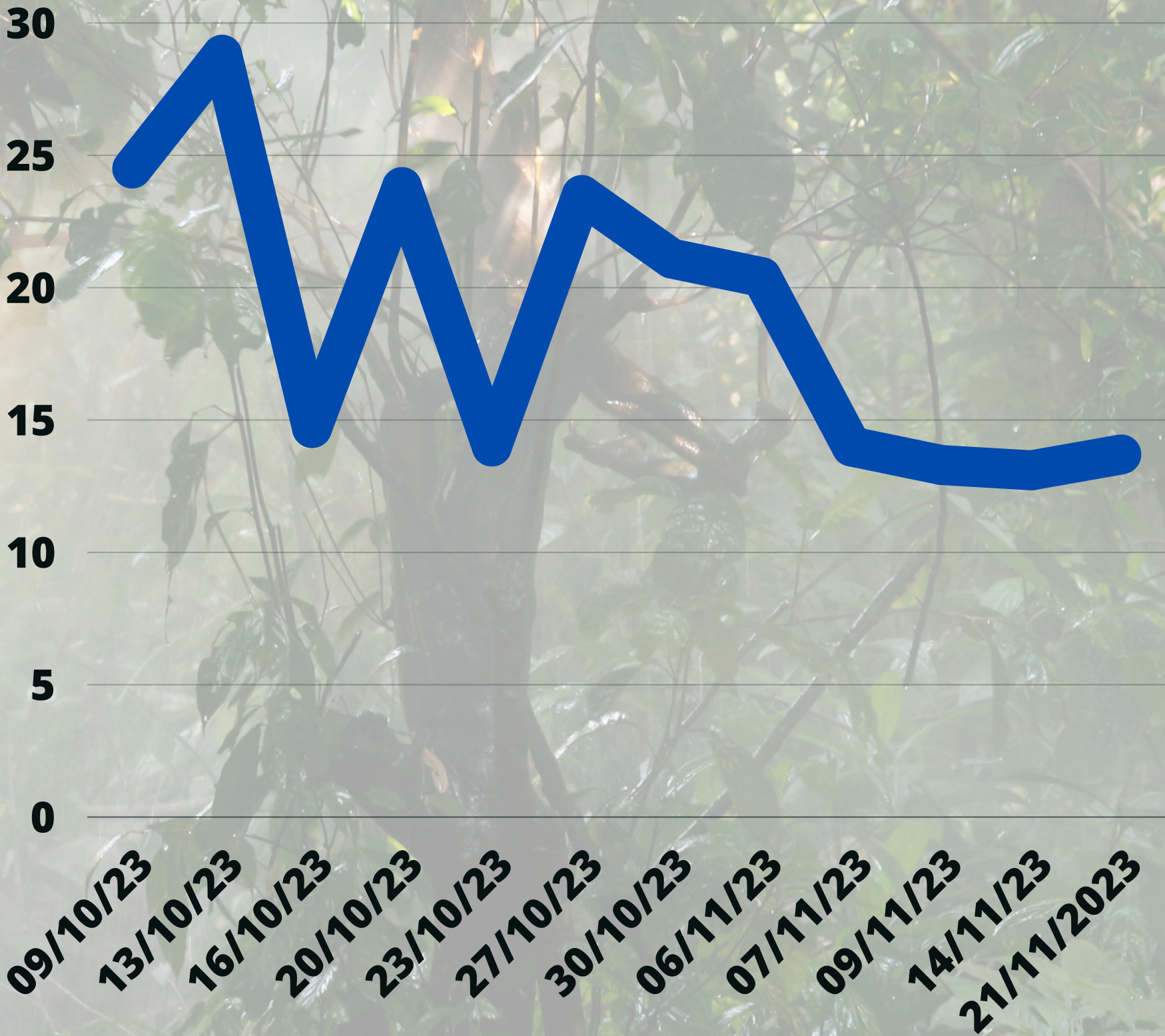
Softwoods: $d = 400 \text{ Kg/m}^3$

Latin/ Common Name	Volum e (m3)	Wood density (kg/m3)	Abovegroun d Wet Biomass (kg)	Abovegroun d Dry Biomass (kg)	Aboveground Carbon Storage (kg)	Trapped CO2 (tons)
Tilia europea/ Linden	4,83	700	3383	2368	1184	4,3
Fagus sylvatica/ Wild Beech	0,33	700	228	159	80	0,3
Celtis australis/ Hackberry	16,13	700	11292	7904	3952	14,5
Acer pseudoplatanus /Mountain Maple	0,24	700	171	120	60	0,2



DATE	TEMPERATURES	HUMIDITY
09/10	24,5°C	40%
13/10	28,8°C	58,8%
16/10	14,7°C	40%
20/10	23,8°C	82,4%
23/10	14°C	96%
27/10	23,5°C	74,9%
30/10	21,1°C	74,1%
06/11	20,4°C	82,4%
07/11	14°C	71%
09/11	13,3°C	74,4%
14/11	13,1°C	91%
21/11	13,7°C	66,1%

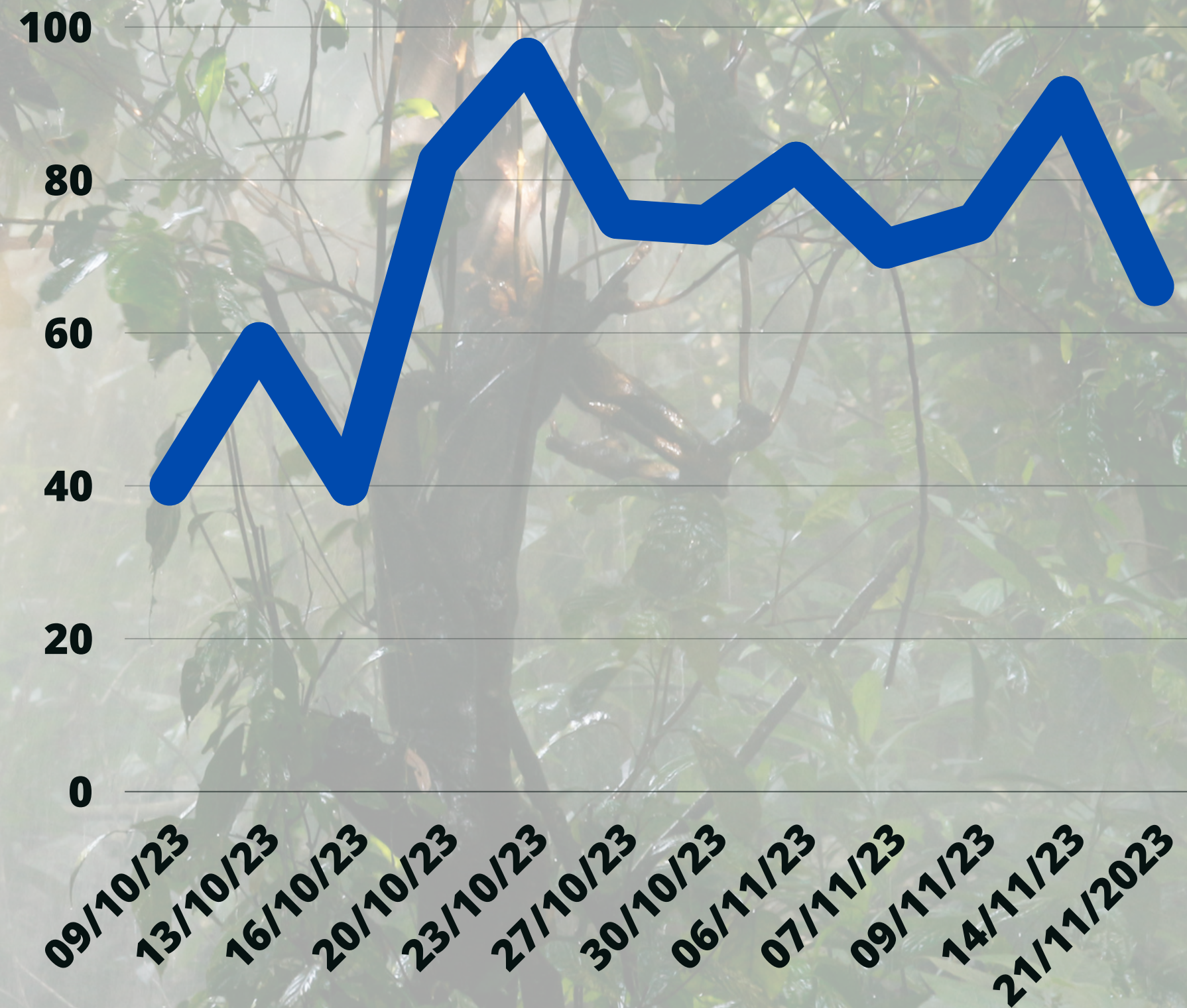
TEMPERATURE (DEGREES)





DATE	TEMPERATURES	HUMIDITY
09/10	24,5°C	40%
13/10	28,8°C	58,8%
16/10	14,7°C	40%
20/10	23,8°C	82,4%
23/10	14°C	96%
27/10	23,5°C	74,9%
30/10	21,1°C	74,1%
06/11	20,4°C	82,4%
07/11	14°C	71%
09/11	13,3°C	74,4%
14/11	13,1°C	91%
21/11	13,7°C	66,1%

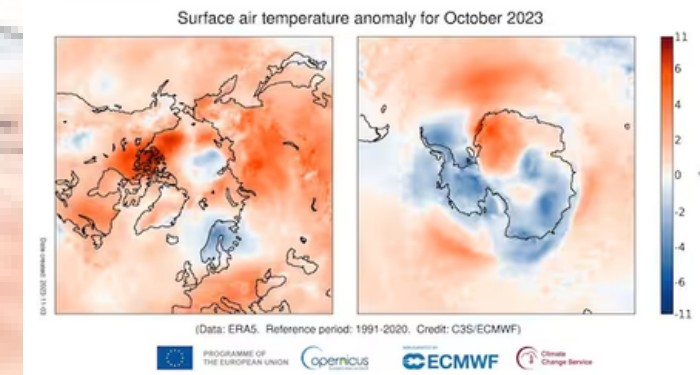
RELATIVE HUMIDITY %



THE COMPARISONS

Due to the effects of climate change, the month of October was characterized from high values of temperature (on average 23°C), relative humidity (on average 81%) and precipitations. At the beginning of November the temperature, suddenly, decreased by about six degrees.

Indeed, because of these aspects, the vegetative rest began later and the leaves began to fall, only, at the end of October and the first days of November.





*Thank you for your
attention*

CLASS: 2AB