

CORK QUALITY ASSESSMENT TRAINING

Coordinator



Partners



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CORK INET
SCIENCE TO PRACTICE EVENT
OCTOBER, 2020

CORK QUALITY ASSESSMENT TRAINING

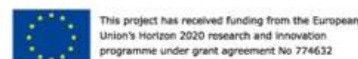
Cork quality assessment in Tunisia : practical issues

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Presentation Outline

1. National context and general data
2. History of cork harvesting in Tunisia
3. Legal framework and market structure
4. Quality assessment in Tunisia

National context and general data

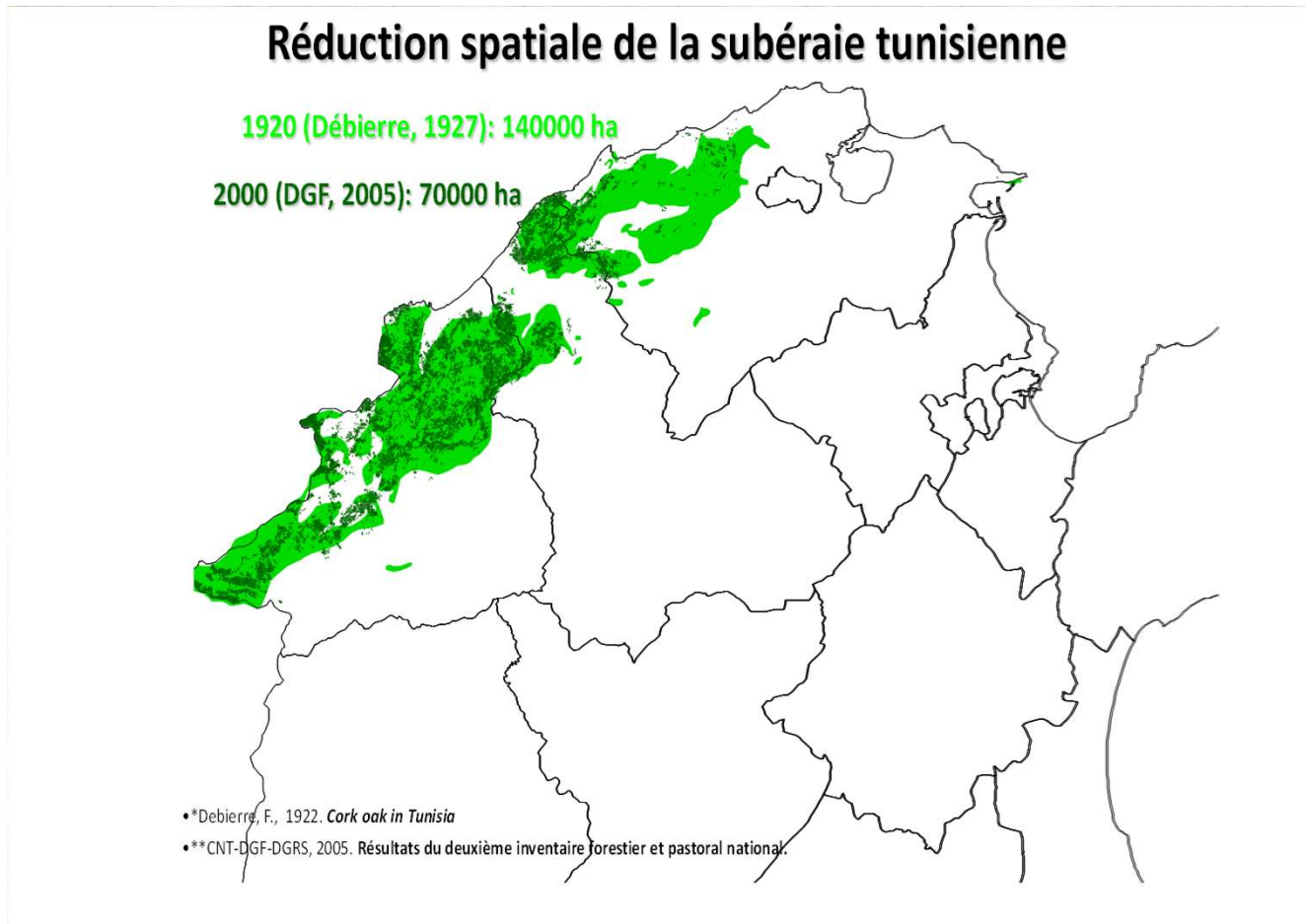
- Tunisian cork oak forests are a continuation of the Algerian coastal strip and are concentrated in large stands in Nefza-Mogode and Khroumiria.
- The Tunisian forest of cork oak belongs to the state since 1890, two-thirds of this forest consists of pure stands while the third part is a mixed stands with the zeen oak and maritime pine
- Tunisia has
 - 5th most important surface area in the world : 4,6%
 - 6th largest producer of cork in the world : 2,9%
 - 4th mondial position in terms of yield : 90 kg/ha
- In Tunisia, cork is harvested every 12 years on the same subject: crop rotation (market thickness of 30 mm)
- Harvesting period : 15 June- 15 August

National context and general data

The Tunisian cork oak forests has, since the early twentieth century, a decline that has continued to increase, estimated at 22% (for 40 years) and 9% (for 15 years) or the equivalent of about 700 ha/year.

- Aging populations
- Absence of natural regeneration
- Forest fires
- Pests and diseases
- Lack of silviculture for the management of stands (regeneration by cutting)
- Lack of a planting and assisted regeneration program
- Overgrazing

National context and general data



Source : KHALDI ABDELHAMID I.N.R.G.R.E.F (janvier 2020)

History of cork harvesting in Tunisia

9 years Rotation period

PERIOD	ROTATION
1884	1 ^{ère} OPERATION DEMASCAGE (LM)
1893	1 ^{ère} OPERATION DELIEGEAGE (LR)
1902 - 1910	2 ^{ème} ROTATION
1911 - 1919	3 ^{ème} ROTATION
1920 - 1928	4 ^{ème} ROTATION
1929 - 1937	5 ^{ème} ROTATION
1938 - 1946	6 ^{ème} ROTATION

12 years rotation period

PERIOD	ROTATION
1947 - 1958	7 ^{ème} ROTATION
1959 - 1970	8 ^{ème} ROTATION
1971 - 1982	9 ^{ème} ROTATION
1983 - 1994	10 ^{ème} ROTATION
1995 - 2006	11 ^{ème} ROTATION
2007 - 2018	12 ^{ème} ROTATION

Tunisian cork forest started
its 13th rotation from the year 2019

Stripping: The male cork must be harvested for the first time when the tree's age reaches 30 years



Cork oak trees without their barks (mother)



Barks development after the stripping operation



Pictures : kachouri Habib (R.E.F)

**Development of reproduction cork
under the crust after 12-years**



Stripping operation



Cork stacker in the forest



Pictures : kachouri Habib (R.E.F)

National context and general data

There are 3 main issues

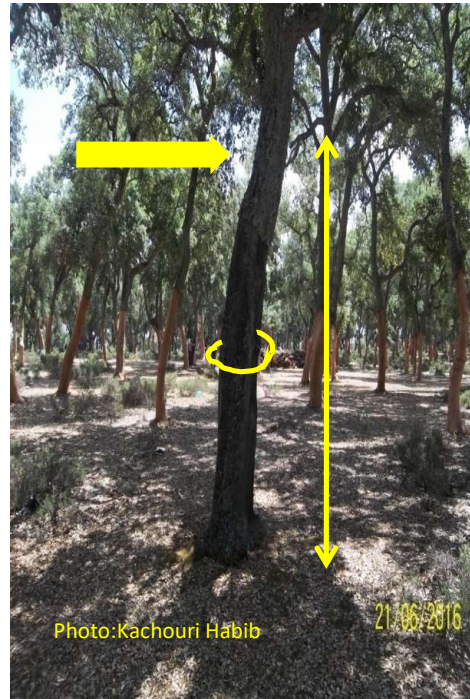
- Unskilled labor
- Cork quality assessment
- Actual situation of cork oak forests

Unskilled labor

Detaching the cork with the bevelled ax handle
(from bottom to top should be avoided)



over exploitation



Under exploitation



Average annual production (Qx)

PERIOD	Total Production	Reproduction cork	Corkwaste	Virgin Cork	Ramassage
1959-1970	90 655	55525	7950	13077	14103
1971-1982	87 627	57344	6180	7148	16955
1983-1994	88 488	65302	6755	4281	12150
1995-2006	79 996	56691	7544	3705	12056
2007-2018	49 823	42240	3411	2022	2150

The total surface area of this forest is **53592 ha representing** 59% of the total surface area of cork oak forest

Legal framework

- From 1965 to 1988, sale of all the production by **mutual agreement** to the National Cork Society (SNL) with a conventional price following an agreement signed between the Secretary of State for Agriculture and the National Cork Society.
- Since 1990, cork is sold in Tunisia by the government through a public tendering and auctions
- The 2 other companies (B.T) and (L.A) bought the raw cork from the S.N.L and proceed to its transformation.
- It is forbidden by Tunisian law to export raw cork. It must be transformed in Tunisia

Legal framework

- Since 2000, No auction has been made until present : there is an agreement between firms to divide the national production among them=> **oligopolistic competition**
- the State is the only seller represented by the Forest Exploitation Authority, playing the role of **monopoly**.
- The forest exploitation authority should estimate the price taking into account international prices for a similar quality and the depreciation of the dinars => limited power over price definition

Market structure

Buyers are the cork manufacturers and their production sites are located in Tunisia.
Buyers accept to buy cork with the starting price with slight negotiation over the offered by the administration

Group	Firm	Production area	Date of first activity
AMORIM	S.N.L, S.T.I.B	Tabarka	1962 1996
MOLINAS	B.T, L.A,	Mégrine	1988 1981
CORTEX	Cortex , Corte med	M'hamdia	2004 2012

Quality assessment

Before selling the raw cork, the forest exploitation authority need to :

- Assess its quality : only for reproduction cork
- Estimate the selling prices

Quality assessment

- The classification of cork (quality assessment) is elaborated according to its final use
- The main use of cork is
 - Stoppers for wine bottles (high international demand)
 - Washers and discs (thin cork)
 - Natural cork industry
- This activity generates very important economic values for the administration as well as for industry.

Quality assessment : 1st training in Tunisia

- Period : 17-21 may 2016
- Venue : Tabarka
- Target group : Forestal technicians
- Total number : 20 persons
- Trainers : Experts of IPROCOR
- Host : DGF



Quality assessment in Tunisia

- 3 main steps

1st step: office work

2nd step: fieldwork

3rd step: office work (synthesis of collected data)

Quality assessment in Tunisia

1st step: office work

- Consultation of the existing data and documents at the Forest Exploitation Authority was made with reference to:

Sampling tables of stored cork at each park (number of reproduction cork piles, size of each pile, available quantity, location of the park)

Quality assessment in Tunisia

2nd step: Field work

2.1 Sampling



- At the level of each cork park, and for each stack of reproduction cork, a minimum of 60 samples are taken and 250 samples of cork planks are selected.
- Samples are selected randomly from the length on either side of the stack at equal intervals and from the inside of the stack.

Quality assessment in Tunisia

2.2 Quality assessment of selected samples

The quality of reproduction cork is determined according to the thickness (caliber) of the boards and the classes which are a function of intrinsic factors (porosity, density, condition of the belly, condition of the back, color and growth) and alterations (anomalies and defects) following the international standard.

- First step : cork classification into four groups, namely the **thin, regular, thick and over thick cork**
- Second step: cork classification into six classes from 1 to 7 according to its quality; category 7 is considered as cork waste

Quality assessment in Tunisia

2.2 Quality assessment of selected samples



Classification according to thickness (caliber)

Caliber categories:

More than 19 lines: on thick

Between 15 and 19 lines: thick

Between 13 and 15 lines: regular

Less than 13 lines: thin



To determine the thickness, we measure the dimension of the board in the radial direction.

It is measured in lines, using an instrument called a “line foot” and each line is equal to 2.25 mm.

Quality assessment in Tunisia

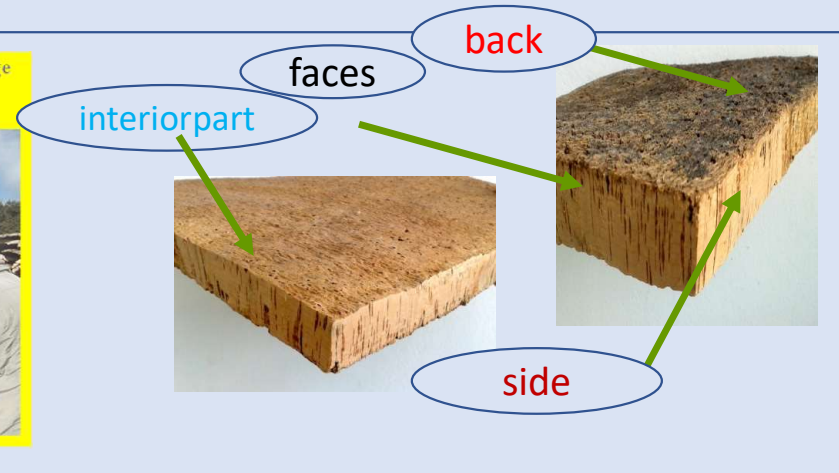
Classification according to appearance (classes)

Appearance class categories: First, second, third, fourth, fifth, Six and the seventh (waste)

To properly determine the appearance classes of a reproduction cork board, we observe different sides. To do this, we make a cut with a special knife which allows the lenticels to be identified.

Then, we observe the interior part mainly its color to fully appreciate the porosity as well as the presence or absence of alterations (defects and anomalies).

Finally, observe the back of the board by estimating the thickness of the crust, the presence or absence of crevices and cracks



Quality assessment in Tunisia

3rd step : office work (restitution and synthesis of data)

Data analysis to estimate :

The average percentage in thickness (% thin,% regular,% thick and% over thick).

The percentage of each category (1, 2, 3, 4, 5,6 and waste) for each thickness.

The average amount of reproduction cork by thickness and category

THANK YOU