

European Industrial Hemp Association

4th International Conference – Huerth, nov. 21° - 22nd 2006



Hemp industry in Italy latest developments



Historical background

The “golden” period of the hemp crop in Italy started in the XIV century and came to an end 500 years later. The peak of hemp production was reached in the end of ‘800 when about 135.000 ha were cultivated. After this period the surface progressively declined, with the only exception of the periods between world War I and II , when a strategic use of hemp fibre pushed its cultivation to 100.000 ha.



Historical background

Between 1950 and 1962 many initiatives were promoted to save this crop, supporting the cultivation of hemp: research activities, innovative harvesters, controlled retting. Despite all these attempts in 1970 only 1000 ha of hemp survived. The competition of manmade fibres, of other natural fibres, of low cost hemp imported from Eastern Countries, the high demand in labour and limited profits made hemp finally disappear. Since 1975, the law on drugs prohibited growing hemp even for fibre destination. This law was not the only cause of hemp decline, but it was later the main obstacle to the reintroduction of hemp cultivation.



Present situation - Perspectives -

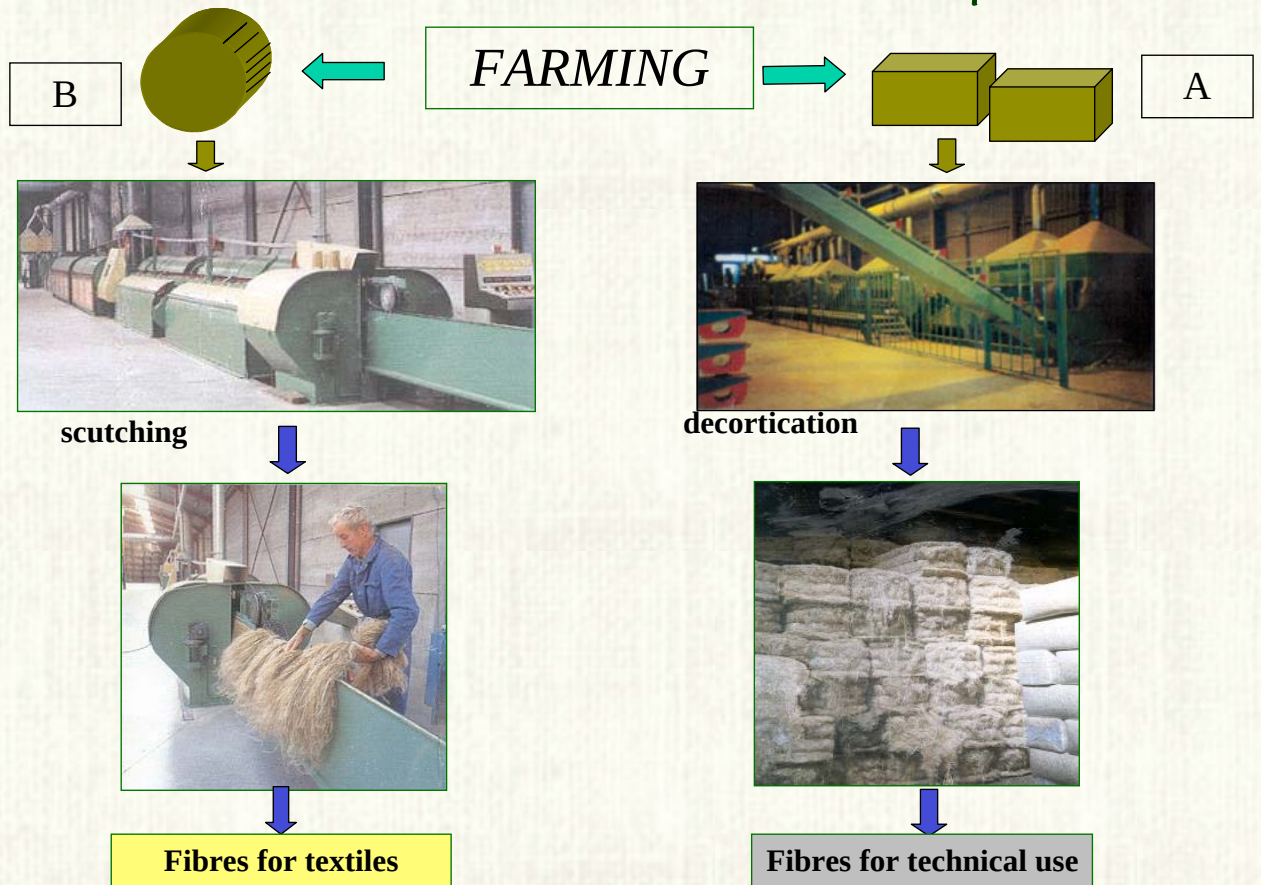
Many products could be made with hemp, but.... entering the market is difficult.

In Italy, as well as in Europe, demand is growing, but offer of locally made products is non existent.

Textile has a particular chance to be developed

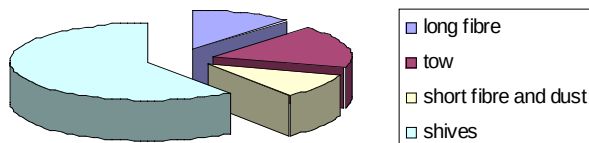


Present situation - Perspectives -



Present situation - Economical evaluations -

Quantity of products – % 1 ton.

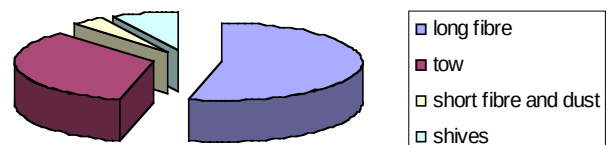


Shives :
60 % quantity
10 % value

Long fibre :
12 % quantity
55 % value

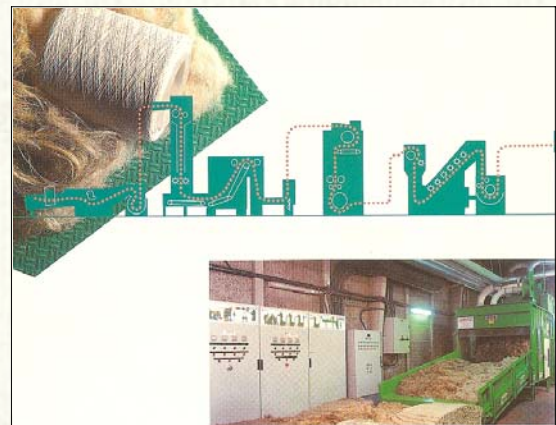
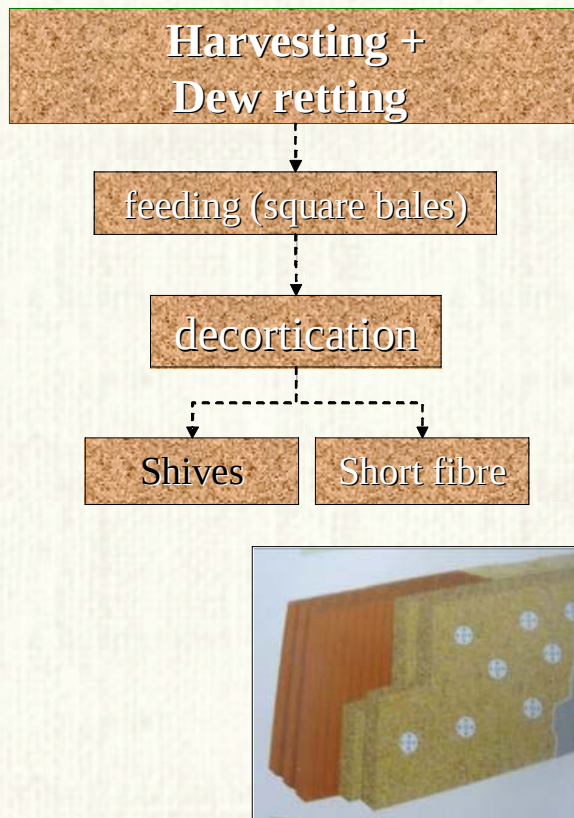


Value of products – euro/kg



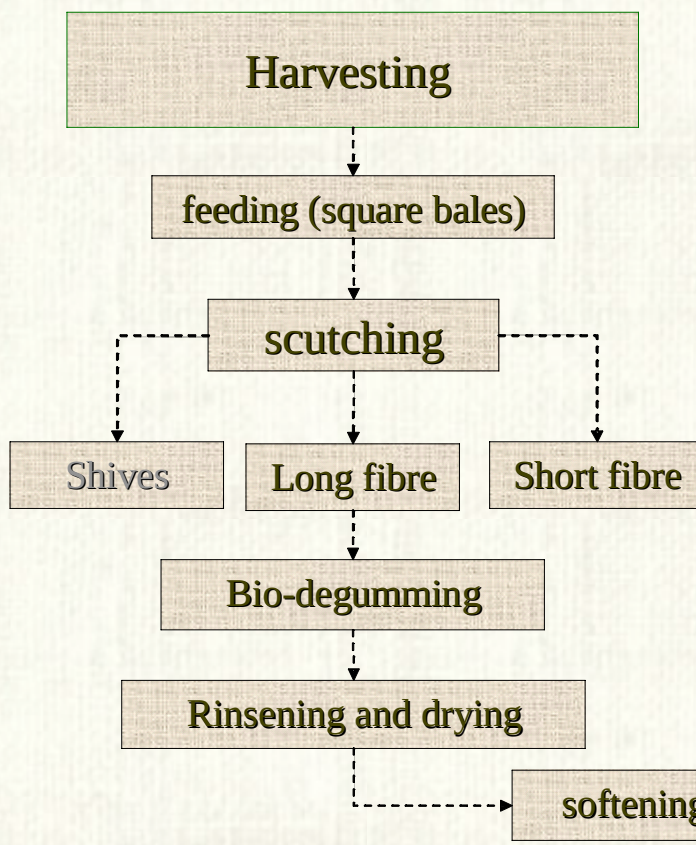
Processing systems : Fibre for industrial use

A



Processing system : Fibre for textiles

B



Dry
spinning

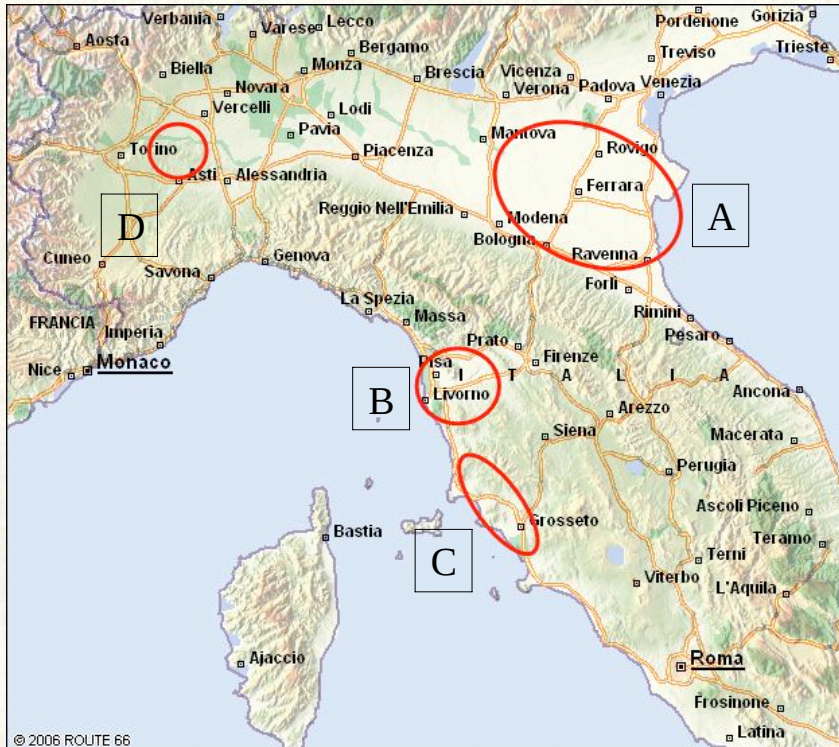
Wet
spinning

Carding

Hackling

PROJECTS & PARTNERSHIPS

Present situation in Italy



A ECOCANAPA –
Runs a scutching mill
and grow “baby
hemp” for textiles

B FIBRANOVA –
Runs a pilot plant for
bio-degumming.
An industrial project
development is in
progress.

C CANAPONE –
R&D project for
textile production, in
progress 2005-2008

D ASSOCANAPA –
Some experimental
crops, r&d activities



Baby Canapa

hemp stems are
treated with
Glyphosate when
1,20 m high, dew
retted, harvested by
mean of a flax
reaper, round-baled
and scutched



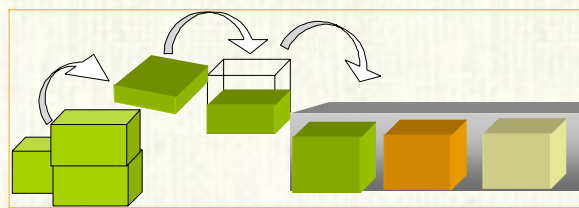


hemp stems
harvested, cut
and round-
baled, are
scutched
“green” and
fibre is
bio-degummed
by Fibranova

Full size Canapa



Bio-degumming

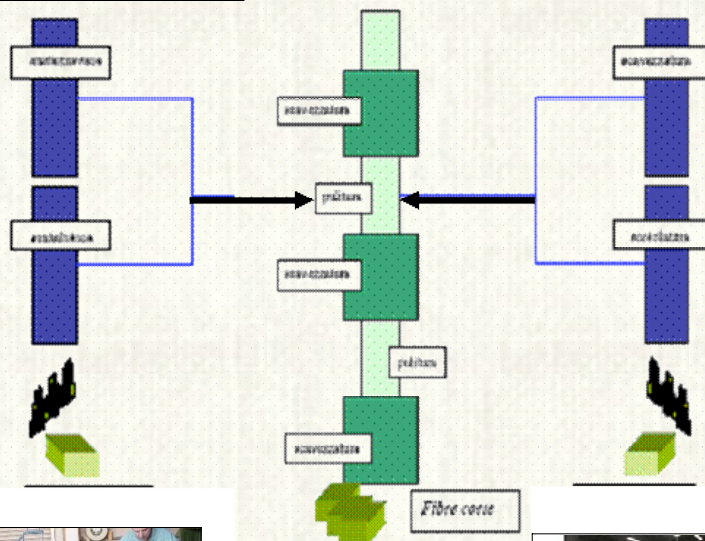


Green decortication



decortication on dry
green stem is
possible with existing
devices.

Innovation is not strictly
needed in the case of
decortication and scutching,
but still it is necessary a
carefull choice of machines
which are compatible with
each other, to **optimize
operational costs** and
guarantee **consistency and
economic sustainability**.





advantages

Decortication and scutching on dry green stems provides some advantages to farmers and processors: -

- *Harvesting period is wider*
- *A very short permanence in the field is necessary*
- *No retting is required*
- *Fibre suitable for textile can be sold for an higher price for an higher yield*
- *Transport to the bio-degumming facility is economically viable also at long distances*



advantages

Bio-degumming on scutched fibre provides some advantages to processors and spinners:

- *fibre is retted, instead of stems*
- *selected strains of bacteria are used*
- *processing is planned in industrial scale*
- *specific tool are used to assess and control fibre quality*

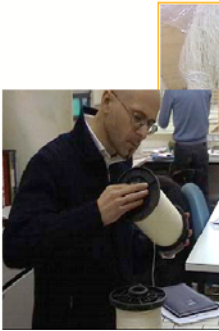




results



long fibr during treatment



Tests and trials confirmed that an industrial bio-degumming system is able to provide substantial advantages in terms of quality, environmental impact and economical performance

Existing hemp harvesters



A substantial innovation is needed also in harvesting systems and machines





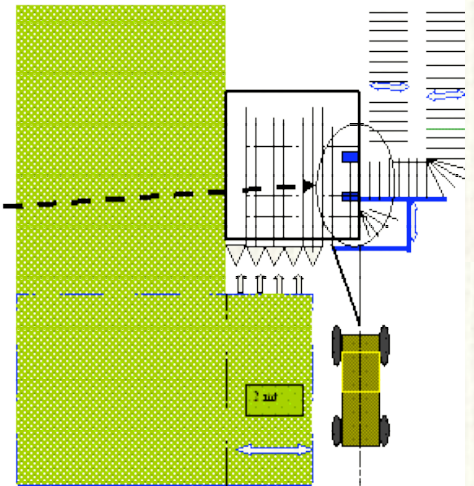
Research & developments

Fibranova has developed the concept to build harvesters where:

- *Hemp stalks are mowed and kept parallel*
- *Swaths are laid parallel on the field*
- *Hemp stalks are cut into two parts, 1.2 mt long*
- *The swath is round-baled like flax*



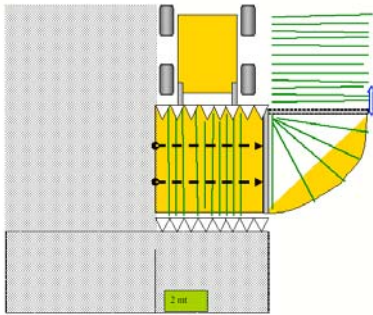
Research & developments



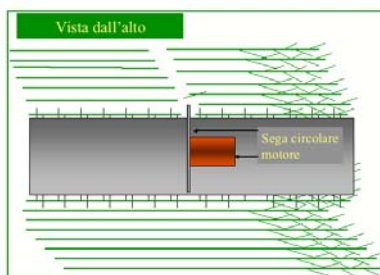
Some tests have been done by Fibranova on an existing prototype harvesters derived from the russian model JZK-19 Beshetzk

A new adaptation of this machine has been recently built in Italy





In 2005 Fibranova built and tested two specific prototype devices in the framework of the Hemp Sys project



According to this concept a new prototype has been built in Germany in the current year, by Kranemann, Paulitz and Tofani.

During this harvesting season it has been tested and proved to be able to mow and lay down hemp stems in ordinate swath, where stems are full size and parallel to each other

Latest developments



Latest developments



The second prototype machine built in 2005 for the Hemp sys project has been updated and used to cut hemp stems at 1.20 m, and lay down them in separate swath



Hemp stems were finally round baled



expected developments

2007 will be a critical season for hemp production developments in Italy

- More extensive crops will be sowed
- Harvesting equipment will be upgraded and optimized for large productions
- A bio degumming facility is expected to be operative soon
- Industrial partners are opening the doors to enlarge domestic markets

*Thank you for the attention
For more information :*
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