Regional hemp textile production chain in the Euregio Rhine-Waal

Hemp fibres

Hemp (Cannabis sativa L.) is a crop that can be grown in moderate regions around the world. The crop requires little input and contributes to sustainable agriculture. Already in ancient times the crop has been cultivated for textile fibres. In the beginning of the 20th century, cultivation declined due to the appearance of alternative fibres. In recent years hemp regained interest due to the sustainability of the crop and high comfort of hemp fabrics.

Textile chain

Bast fibres like flax fibres can be processed into textile yarns by wet and dry spinning. However, this technology is declining in Europe. Cotton yarns are being produced by spinning on advanced short fibre spinning machines. Both spinning technologies are not suitable to spin hemp produced in Western Europe. In order to use the technological advanced short fibre spinning systems an additional refining step is required to be able to spin hemp fibres on a short fibre system. This can be achieved using steam explosion technology (STEX). Hemp fibres are treated with steam under high pressure and subsequently released through a cyclone. The resulting fibres can be spun (eventually in combination with cotton or other fibres) on short fibre spinning systems. The yarns can be applied in fashionable and ecological clothing, functional textiles for health care and home textiles.

Regional hemp production chain

In the Euregio Rhine-Waal farmers, companies and research institutes have joint forces to develop a hemp textile chain in the region. For farmers it allows the cultivation of a new crop in the crop rotation scheme. Regional textile companies can develop novel yams and fabrics to improve their competitiveness on the world market. In 2005, 6 ha. hemp was cultivated in Rheden (Netherlands) and Kleve (Germany). The crop has been harvested and decorticated. The fibres were refined by steam explosion and with cotton spun on a short fibre spinning system to give a 50% hemp yarn. These yarns are applied in fabrics, jeans and functional textiles for health care.

So far the project has shown the technical feasibility of the regional hemp textile chain. At present the yarn quality is improved and the market for hemp textiles is being developed.

Project partners

- BRUT (EWIV) / Technologie-Zentrum Kleve
- Plant Research International B.V., Wageningen UR
- Landwirtschaftskammer NRW, Kleve
- Biologische Produzentenvereniging Achterhoek
- Deutsches Textilforschungszentrum Nord-West e.V., Krefeld
- Trützschler GmbH Co.KG, Mönchengladbach
- VRISIMA B.V., Laren
- Universität Duisburg-Essen / FFTForschungsförderung und Transfer
- Stichting Food Valley Wageningen

Supporting partners

- BOOS textile elastics, Goch
- Schlaffhorst Sauer, Mönchengladbach
- Gardeur AG Mönchengladbach

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