

Abstract 17th Conference of the European Industrial Hemp Association (EIHA), 16 - 17 June 2020, Maternushaus, Cologne, Germany

Title: Sustainable hemp textiles

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The global production of textiles with cotton as the main textile crop is severely harmful to the environment, with cultivation involving large consumption of water and use of pesticides, large water and chemical consumption for processing cotton into textiles, and energy for transport. Cotton production is responsible for up to 25% of world use of pesticides. Therefore, the textile and fashion industries are looking for sustainable alternatives with less negative impact on the environment, and with fiber qualities suitable for production of yarns and fabrics in comparable qualities as cotton.

Fibers from sustainable grown industrial hemp (*Cannabis Sativa*) can meet this demand, but today production of hemp-based textile in EU is very limited without industrial scale due to lack of scalable and adequate cultivation- and fiber-processing methods including spinning, that can secure production of high quality yarns.

One big challenge using hemp for textile purposes is achieving high fiber quality, smooth and flexible enough to obtain spinnable thin yarns. To meet this challenge, one need to reinvent the hemp textile industry and approach the whole value chain and in a sustainable and transparent way. You need new harvesting method to ensure the processing of parallel oriented stems. A new retting method, scalable, which can give the same quality every year, and not being depended on weather conditions. A new scutching method, scalable for big scale, replacing old outdated industry with low capacity and huge environmental problems with dust etc. The decortication of the fibers must be efficient and creating a quality suitable for spinning yarns for low count. And you can continue the value chain processing the textile with sustainable methods for dyeing and finishing processes.

Preliminary results from a Danish funded project and attempt to establish a European consortium for a new EU-project will be presented.