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Industrial Hemp Agronomy and Fibre Value Chain in Pakistan: Current Progress, Challenges, and Prospects

Authors : Saddam Hussain, Ghadeer Mohsen Albadrani

Abstract : Pakistan is one of the most vulnerable countries to climate change. Being a country where 23% of the country's GDP relies on agriculture, this is a serious cause of concern. Introducing industrial hemp in Pakistan can help build climate resilience in the agricultural sector of the country, as hemp has recently emerged as a sustainable, eco-friendly, resource-efficient, and climate-resilient crop globally. Hemp has the potential to absorb huge amounts of CO_2, nourish the soil, and be used to create various biodegradable and eco-friendly products. Hemp is twice as effective as trees at absorbing and locking up carbon, with 1 hectare (2.5 acres) of hemp reckoned to absorb 8 to 22 tonnes of CO_2 a year, more than any woodland. Along with its high carbon-sequestration ability, it produces higher biomass and can be successfully grown as a cover crop. Hemp can grow in almost all soil conditions and does not require pesticides. It has fast-growing qualities and needs only 120 days to be ready for harvest. Compared with cotton, hemp requires 50% less water to grow and can produce three times higher fiber yield with a lower ecological footprint. Recently, the Government of Pakistan has allowed the cultivation of industrial hemp for industrial and medicinal purposes, making it possible for hemp to be reinserted into the country's economy. Pakistan's agro-climatic and edaphic conditions are well-suitable to produce industrial hemp, and its cultivation can bring economic benefits to the country. Pakistan can enter global markets as a new exporter of hemp products. The production of hemp in Pakistan can be most exciting to the workforce, especially for farmers participating in hemp markets. The minimum production cost of hemp makes it affordable to small holding farmers, especially those who need their cropping system to be as highly sustainable as possible. Dr. Saddam Hussain is leading the first pilot project of Industrial Hemp in Pakistan. In the past three years, he has been able to recruit high-impact research grants on industrial hemp as Principal Investigator. He has already screened the non-toxic hemp genotypes, tested the adaptability of exotic material in various agroecological conditions, formulated the production agronomy, and successfully developed the complete value chain. He has developed prototypes (fabric, denim, knitwear) using hemp fibre in collaboration with industrial partners and has optimized the indigenous fibre processing techniques. In this lecture, Dr. Hussain will talk on hemp agronomy and its complete fibre value chain. He will discuss the current progress, and will highlight the major challenges and future research direction on hemp research.

Keywords : industrial hemp, agricultural sustainability, agronomic evaluation, hemp value chain
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