

Sustainable eco friendly organic cotton

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Cotton is reputed as "Queen of the fibre plants" as it is one of the major fibre crops of global importance despite the increasing production of synthetic fibres. Cotton is grown more than 80 countries of the world covering around 2.5% of the world's cultivated land. Due to its huge commercial value, cotton also represents an essential component of foreign exchange earnings of cotton producers.

The cotton goods sold today do not deserve the natural fibre label as over 99% of all cotton is cultivated using synthetic fertilizers and chemicals to get higher yield. Cotton crop is attacked by more than 230 species of insects all over the world. Due to its vulnerability to insect pests, Cotton is the major consumer of agrochemicals in the world. 16% of the world's insecticides are used for the single cotton crop. About 50% of total cost of seed cotton production goes for agrochemicals on global basis. Professor Doug Murray, during his study on pesticide use on cotton stated that the most hazardous available pesticides are used on cotton. According to a Pesticide Action Network statistics, it takes about one fourth of a pound of chemicals just to make one cotton t-shirt, and two-thirds of a pound to make a pair of jeans.

The use of various toxic pesticides and chemicals result in disturbing the biological balance, increasing the cost of production, development of insects' resistance to insecticides, and changing the insect pattern. Other main environmental consequences are the water bodies and air pollution, decrease of biodiversity and disturbing of ecosystems.

Organic cotton solves all these problems which is grown with out inorganic fertilizers, fungicides, herbicides, insecticides, etc., and is duly certified by a recognized certifying organization. Organic production systems replenish and maintain soil fertility, reduce the use of toxic pesticides and fertilizers, and build biologically diverse agriculture. Organic cotton is also called as clean cotton, natural cotton, green cotton or environment-friendly cotton.

Comparison of organic cotton with conventional cotton

Organic cotton production is biologically based rather than chemically dependent growing systems for farming. For the cultivation of organic cotton all inorganic fertilizers are prohibited and replaced by farmyard manure, composite, green manures, fish meal, cotton seed meal, leather meal, cake, gypsum, etc.

Botanical pesticides such as neem cake, ipomea, etc., and botanical herbicides are used for organic cotton production instead of chemical pesticides, insecticides and herbicides for conventional cotton production. Similarly chemical defoliants are prohibited in organic harvesting. Organic cotton is not only important in the clothing chain but also in the food chain. Whereas with conventionally grown cotton, the pesticides residues from the cotton

seeds concentrate in the fatty tissues of animals and end up in meat and dairy products. Organic cotton production also helps in reducing the cost of cotton cultivation by eliminating the use of various agrochemicals. However, there is low organic cotton production yield as compared to conventional cotton and also the cost of organic cotton fabric is much higher.

Organic cotton farming provides farmers a much healthier work environment by eliminating harmful chemicals. The land becomes much healthier, as it is not being polluted with harmful chemicals. It reduces environmental pollution as no environmentally polluting and hazardous chemicals are used in organic cotton production. Organic production also eliminates harmful chemicals from the treatment process. The organic treatment process uses non toxic dyes and preclude from harmful treatments such as chlorine bleaches and toxic finishes.

Production

Organic cotton production system is a complex system and consequently requires a certain amount of stability to ensure sustainability and thus obliging farmers to manage their farms for optimum results, such as by investing heavily in soil fertility management. Cotton production has potential in areas where cotton is the main cash crop or the sole cash crop.

Certified organic cotton is grown in 22 countries worldwide with the top ten producer countries led by India, includes Turkey, Syria, Tanzania, China, United States, Uganda, Peru, Egypt and Burkina Faso respectively. The regional wise organic cotton production in 2008/2009 is given in table as under:

According to the fourth annual Organic Exchange Farm and Fiber Report 2009, by the 2008/09 growing season, organic cotton grown on 625,000 acres (253,000 hectares) with some 222,000 farmers involved. Production reached 175,113 metric tons (802,601 bales) in July 2009. According to preliminary data collected by the Organic Trade Association (OTA) U.S. growers of organic cotton increased plantings of organic cotton acreage by 26 percent in 2009 over that planted the previous year.

Organic cotton now represents 0.76 percent of global cotton production. This suggests an average yield of organic cotton fiber per hectare of around 690 kg per hectare. Organic cotton farmers have huge concern over the average yield and are in their view that a well-supported organic cotton sector can achieve much better yields.

Organic cotton products and prospects

The recent ecological restrictions and global eco-friendly market dynamics have introduced organic cotton as an ecological substitute for conventional cotton textiles. Many leading retailers and brands now include organic cotton lines in their clothing ranges and have taken a step towards sustainability. Some leading companies are Nike, Coop Switzerland, OTTO, Patagonia, Gap Inc, Levi Strauss, Wal-Mart and Marks and Spencer.

Organic cotton fibre production in 2008/2009		
Region	Production 2007/2008 (Metric Tons)	Production 2008/2009 (Metric Tons)
SE Asia	73,908	107,800
Middle East	52,753	49,450
Africa Non CFA	5,455	6,610
China	7,354	3,849
USA	2,716	2,729
West Africa	1,069	1,612
Latin America	1,590	1,614
North America	761	936
Central Asia	194	428
EU	72	85
Total	245,872	175,113
Total in Bales	668,580	802,601
Source: Organic Exchange.		

Organic cotton has become the most sustainable choice of today's fashion world. There is growing awareness for organic textiles. According to a recent report, in the U.S., Organic and eco friendly textile sales have been double-digit growth in the past several years, and the industry projects further growth. Apparel companies are developing programs that either use 100 percent organically grown cotton, or blend small percentages of organic cotton with conventional cotton in their products. There are a number of companies driving the expanded use of domestic and international organic cotton.

According to the Organic Trade Association's 2010 Organic Industry Survey, the future looks promising, with organic fiber products appearing in more mainstream outlets, led by large U.S. textile retailers. Established markets such as the UK continue to show strong continued demand with the market estimated to nearly triple between 2008 and 2012. The continued emergence of new consumer markets, such as Eastern Europe and East Asia may well further open new market prospects.

Organic cotton demand will continue to grow in the future, thus increasing the number of spinning and textile mills involved, and enlarging the range of intermediate and end-products available to the industry and to consumers.

There are many spinning mills and integrated textile mills involved in the production of organic cotton items today. Most organic cotton spinning takes place in Turkey and in India, but there is also spinning in China, Indonesia, Mexico, Pakistan, Peru, Portugal, the Republic of Korea, Switzerland, Thailand and the United States.

The infrastructure for processing and handling of organic cotton in various stages of the textile chain is also expanding. Over 3 million exporters/importers, dyes/chemicals manufacturers and others have registered for organic textiles, which gives an idea about the direction on which organic textiles is going forward. There is significant increase in area for organic textiles in stores all over the world. United States grew organic fiber sales by 10.4% in 2009 over the previous year. The Indian government has set a target of US \$ 1.0 billion which is 10 fold increase over 2008 of organic product sales.

Global organic cotton market

The market for organic cotton and eco-textiles was initially shaped by a few committed and leading companies together with a wide range of small and medium-sized textile and clothing companies. Currently many new brands and retailers have started an organic cotton blending or conversion programme. The number of small and medium-sized companies entering the organic cotton market has also expanded rapidly. The United States and European countries are the bigger market for organic cotton and eco-textiles. Other markets exist in Asia, Australia, Canada, Egypt and South Africa.

The growing demand for organic cotton, and the significant interest from new brands, makes it possible for industries today to operate larger production runs of organic cotton textiles than before, thus reducing the cost per unit. The infrastructure for organic cotton manufacturing, including 100% organic cotton items, is improving. Many textile mills now considering producing higher priced 100% organic cotton items which is more interesting, technically and financially rather than blended 3-5% organic cotton items for which no higher price is being paid by the buyer.

Initially many companies started the use of organic cotton in knitted shirts, dyed and/or printed, the production of which does not require high minimum volumes. However, at that time woven organic cotton items are not yet very common in the marketplace. Now there is a growing number of suppliers of organic cotton

denim fabrics for jeans, including Cone Denim (United States), Hellenic Fabrics (Greece), Ital Denim (Italy), Isko (Turkey), Orta Anadolu (Turkey) and Tavex (Spain). The infrastructure of the organic cotton market is strengthening and expanding, and as a result a wider range of fashionable products is becoming available to end-consumers.

According to the Organic Cotton Market Report 2009 released by Organic Exchange in May 2010, global sales of organic cotton apparel and home textile products reached an estimated \$4.3 billion in 2009. This reflects a 35 percent increase from the \$3.2 billion market recorded in 2008. Companies reported significant growth of their organic cotton programs, and increased adoption of standards addressing organic product traceability and sustainable textile processing.

Organic Certification

Companies are increasingly becoming certified to traceability standards such as the Organic Exchange (OE) Blended or OE 100 standard tracing the organic fiber from the field to finished product. Many manufacturers also became certified to the Global Organic Textile Standard (GOTS). GOTS have been developed recently by the certifying bodies IVN, JOCA, Soil Association and OTA. Other certifiers are expected to join the GOTS. The harmonized standard aims to ensure the organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing up to labeling, in order to provide credible assurance to the end-consumer. GOTS enables textile manufacturers to qualify their organic fabrics and garments with one certificate accepted in all major world markets, which is an important step towards harmonization and transparency of textile labels. Many renowned chemical suppliers have been approved by GOTS for organic textiles.

Limitations

As organic cotton sector is not yet well recognized by the International cotton community despite the increasing involvement of large brands and retailers, it must meet several challenges in the coming years. Organic cotton must respond to many global sustainability challenges over soil fertility, water use and management, the extremely difficult weather conditions, including wind, hail and drought, food security and competition for land with food as well as growing cities.

The conversion to organic farming tends to be more difficult and more expensive in areas, where conventional farming relies upon a high use of synthetic inputs. The 'in-conversion' produce cannot be sold as 'organic' and does not usually fetch a premium in the market. The risks and costs of conversion are a major barrier to the adoption of organic agriculture. Similarly, organic cotton production as such has not yet proven to be an economically attractive alternative for conventional farmers in many areas in the world. Organic agriculture is technically challenging to ensure appropriate yields and income. The growing importance of GM cotton in the world creates direct additional costs for organic cotton production, because of the separation between fields that is required to prevent cross contamination. Defoliation is also a significant obstacle to organic production. Organic cotton fibre, yarn, fabrics and garments cannot be distinguished from conventional ones, and generally not even from GM cotton, other than through documentation about production lots and volumes.

According to a report, the major barriers for planting more cotton is finding a market that may pay value-added costs of organic products, production challenges such as weeds and insects, weed control, and labour costs and competition from International organic cotton producers as well as the cost of transition to organic. ♦