Cotton Industry in Poland

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- Location: Central Europe, Border countries: Belarus, Czech Republic, Germany, Lithuania, Russia (Kaliningrad Oblast), Slovakia, Ukraine
- The country extends:
  - 876 km (544 mi) from north to south
  - 689 km (428 mi) from east to west
- Total area: 312,843 sq km (120,726 sq mi)
  (the 69th largest country in the world, the 9th largest in Europe)
- Population: over 38 million people
- Industries: machine building, iron and steel, coal mining, copper, salt, chemicals, shipbuilding, food processing, glass, beverages, textiles, timber
- Agriculture products: potatoes, fruits, vegetables, cattle, sheep, poultry, eggs, pork, dairy, fish

General Situation in the Polish Textile Sector
- Similar to European countries:
  - Asian-Chinese competition,
  - Liquidation of some textile companies,
  - Decreasing tendencies in textile production,
  - Value of production sold in the whole textile branch in Poland was:
    - ca. 2.1 USD (PLN 6.3) bln in 2009,
    - Dropped by 9% in comparison to 2008

Change in raw cotton consumption in Poland

Cotton Yarn Production in Poland

The number of cotton mills in Poland

Cotton Yarn Production in Poland
Changes in production and import of cotton fabrics in Poland

PRODUCTION OF COTTON FABRICS IN POLAND

IMPORTS OF COTTON FABRICS TO POLAND WITHIN 1993-2009

Comparison of Cotton Textiles

Production in Poland: 2008 - 2009

KONSUMPCJA BAWEŁNY NA WIECIE - EWOLUCJA W LATACH 1990-2009

WORD COTTON CONSUMPTION

Structure of world cotton consumption

Flax, hemp cultivation and production in Poland

Flax, hemp cultivation and production in Poland

Chance for improvement and positive aspects of cotton sector in Poland

Products made of natural fibers as a niche product for demanding customers,
High quality of Polish natural fibers textiles,
Boutiques with natural fibers products as a main way of sale,
Development of bed-linen production,
Stabilization and good prospects for development of Polish knitting branch,
Significant development of production of cosmetic and hygienic products based on cotton raw material
Research supporting the promotion of textiles made of natural fibres

From newborn to old age

Textiles made of natural fibres guarantee well-being

Clothing effect on electromiographical parameters

<table>
<thead>
<tr>
<th>EMG RECORDS IN RESTING STATE</th>
<th>Electromiographical Effect Parameters</th>
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<tbody>
<tr>
<td>Correct record</td>
<td>- do not cause desynchronization of wearer muscles</td>
</tr>
<tr>
<td>Incorrect record</td>
<td>- do not cause of increase of tendency to tiredness</td>
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Examples of EMG recordings obtained in the healthy volunteers:
1. Correct activity – after wearing natural fibre clothing
2. Slight changes of amplitude – after wearing natural fibres clothing with high thermal resistance
3. Changes of amplitude – after wearing clothing made of blends natural fibres / polyester fibres
4. Changes of amplitude – after wearing polyester clothes

The effect of clothes on oxidative stress parameters

Total Antioxidant Status (TAS) decreased significantly for Polyester clothes. This indicates that PES can be responsible for oxidative stress.

Clothes made of natural cellulosic fibres do not have such negative effect on human body

The effect of textiles on human body during sleep

The best clothes made of natural fibres provide sounder sleep, quicker regeneration of the organism by lower inner temperature and higher level of immunoglobulin A

Immunoglobulin content - Body temperature - Sleep duration

Fall of body temperature - Sleep duration

Determination of energetic cost of physical effort of sportswear wearing garments made from polyester and cellulosic fibres
Investigation of energetic cost of volunteers' physical effort while wearing garments made of cellulosic and polyester fibers showed that garments made of cellulosic fibers had the most favorable effect on the energetic cost of physical work, the time of restitution of volunteers and their endurance and efficiency.

- The effect of 100% cellulosic fiber garment on volunteers' endurance was better than in case of running without garment or in case wearing PES garment.
- The most unfavorable effect on the endurance of volunteers was observed in case of wearing the garment made of 100% PES microfibers.

Pyjamas made of natural fibers improve sebaceous glands activity. Synthetic clothes can cause reduction of sebaceous glands activity, reduction of sebum secretion, which process, by covering the surface of the skin, protects it from drying and susceptibility to bacteria and atopic dermatitis.

The studies proved, that garment made of cellulosic fibers like cotton, linen and hemp has a positive influence on physiological parameters of the human body. Actions related to popularization of research on everyday clothing capability for ensuring health and well-being can improve consumption of natural textile products and improve the situation in natural fibers sector.

**CONCLUSION**