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Critical Thinking Paper #2

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**Cotton Processing Pollutes Water Supply Through Various Methods**

*Interpretation (39)*

The production of cotton clothing pollutes the earth’s primary resource, water. Within the production phase, the dyeing and cross-linking of the cotton as well as the dilution of waste causes many pollutants and hazardous materials to enter the environment.

*Analysis (410)*

The textile industry is the first major contributor to environmental pollution in the production of cotton clothing. The effluent from dying the cotton often contains a high oxygen demand, lots of color, alkalis, organic matter, and salt. Of all the dye-fiber combinations, dye on cotton consumes the highest amount of water per kilogram of fiber (Khatri, Peerzada, Moshin, White. 2015; p.51). The process of dyeing cotton uses so much water because of the rinsing and soaping steps needed to get the dye to “stick” to the clothing. In the end, only about 50-80% of the dye used will become “fixed” to the clothes while the other 20-50% will be discharged into the environment (Khatri, Peerzada, Moshin, White. 2015; p.51).

Not only does the environment become polluted by excess dyes, but also by cross-linkers. Cross-linkers are added to cotton to prevent wrinkling, shrinking, and other undesired fabric effects due to washing and drying clothing. On the other hand, they can cause clothes to fade as well as pollute the waste stream. One example of a cross-linker is formaldehyde. Formaldehyde has been known to cause skin and eye irritation, headaches, and trigger asthma. Also, since 2006, formaldehyde has been classified as a human carcinogen by the International Agency for Research on Cancer and the World Health Organization (Moshin, Rasheed, Farooq, Ashraf, Shah, 2013; p.342). After washing cotton items numerous times, these chemicals, such as formaldehyde, have the potential to be released into the environment.

Water becomes polluted not only through the actual dyeing and manipulation of the cotton, but also through the waste flow from cotton processing industries (Chapagain, Hoekstra, Savenije, Gautam, 2006; p.188). The majority of the waste is multi-colored and is composed of non-biodegradable and toxic components (Khatri, Peerzada, Moshin, White. 2015; p.54). This can be very harmful for our environment. When observing the cost for treatment of this polluted effluent, it was found that 50% of the dyeing cost is due to the washing off of the excess dye and the effluent treatment process (Moshin, Rasheed, Farooq, Ashraf, Shah, 2013; p.341). Although most industrialized countries have reached 100% coverage when it comes to treating their effluent wastewater, developing countries are only at about 5% coverage (Chapagain, Hoekstra, Savenije, Gautam, 2006; p.202).

With pollution of our natural resources, such as our water supply, companies such as Patagonia have decided to fully support the movement of selling only organic cotton clothing. They are a company that is not only conscious about the chemicals and pesticides that go into growing the cotton, but also the many steps in the production of cotton clothing (Casadesus-Masanell, Crooke, Reinhardt, Vasishth, 2009; p.229). This is solely one example of a group that is working to make change in the way that cotton becomes processed into clothing.

*Evaluation (30)*

Muhammad Mohsin was an author in two of the four resources used. His bias could have influenced both papers to propose similar thoughts on the environmental effects from cotton-dye effluent.

*Inference (30)*

Polluted effluent from cotton processing will not only directly affect the water near the production plants within the individual countries, but will eventually spread to the entire world’s water supply.

*Explanation (42)*

Within the production phase of cotton clothing, excess dye, chemicals used for cross-linking, and waste are all leaking into the world’s water supply. More companies, like Patagonia, should take a stand and be aware of the processes that are harming the environment.

*Bibliography*

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