

Abstract

Contaminants in cotton present a major problem in the quality of cotton. In this study, it was aimed to determine the contamination sources in Aegean Region and to investigate the possibilities of reducing contamination with controlled production. The study was carried out in 2014-2015 for a two-year period in three different areas (Söke, Menemen, Koçarlı plains), in the Aegean Region, where the crop is harvested by machines. At the end of the first year, 20.505 bales with contaminants were examined and these were classified according to their sources. In the second year first there were training sessions for staff involved in the process of production and ginning. Then 21.665 bales were examined. When the results of pre and post training years were compared, it was observed that the number of sources of contamination increased whereas the contamination amount decreased from 0.463 g to 0.279 g per bales. As a result, the study indicated that training given to the staff made a great deal of contribution to solving the problem of manufacture with contaminants. The current contamination rate in the Aegean region is not in such a very poor condition but can be taken under control by efficient further trainings together with careful production.

References

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- Vanderstock, a., (2012). Preventing contamination in round modules. [<http://www.greenmountpress.com.au/cottongrower/back%20issues/336oncot12/preventing%20contamination.pdf>]. Australian Cotton Ginner's Association.] date: 4.01.2013.

**The Aims of The Study**

- * Determining the contamination types and the contamination quantities in the Aegean Region, one of the largest cotton production area.
- * Determining the quantity and sources of contamination.
- * To find out the effect of controlled production and harvest on quantity and types of contamination.
- * To study the prospects of cotton production without contamination.
- * The study aimed to provide data and materials for law and enforcements and regulations on contamination of cotton as well as for training schemes, informative posters and visual media.

Material and Method**Material**

The main material of the project is the cotton which is harvested by machine in the Söke, Menemen and Koçarlı plains in Aegean Region.

Method

In the first year of the study (2014) 20.505 bales of cotton harvested by machines were examined in six separate ginning factories and contaminants were collected weighed and classified. The same bales were followed to the spinning factories and examined for a second time and distinct contaminants were classified.

In the second year, training sessions were organized for the farmers providing cotton for six ginning factories mentioned above, the staff operating the ginning machine the staff of the factory. Subsequently, the study procedure carried out in the first year was followed in the same way, this time with 21.665 bales.

Results and Discussion

Currently, the amount of contaminants in cotton has been reduced by an amount incomparable to previous years to 2003, when the harvesting through machines became common. However, the issue of contamination has not been eradicated completely. The amount of contaminants have reduced while the number of sources of contamination increased. Of all the sources contaminants identified in the aftermath of the study pieces of metal (0.141 g), fabrics made of cotton (0.114 g), plastic (0.044 g), pieces of rubber from the ginning machine (0.028 g) were determined as the most-widely confronted contaminants. As for synthetic materials, weaved polypropylene thread (0.0109 g) and synthetic fiber (0.008 g) were identified. The types of contaminants collected in the study are similar to Mahduri et. Al. (2013). The sorts of contaminant sources are similar to those found by Marinus et. Al. (2009). When the results of the two years were compared, there was a considerable decrease in contaminant amounts and materials such as plastic, metal, rubber resulting from maintenance conducted in ginning factories. Vanderstock (2012) identified contamination sources as inattention in the fields, lack of cleaning and inadvertent harvesting machine operators. With the training session given, it is predicted that precautions such as giving attention to the cleanliness of fields before harvesting, providing materials for producers by organization involved, more consciously in operations of harvest aid and fight against weeds, given more care for maintenance of transportation trailers before transportation and producing of colourful materials used in cotton production like fertilizer sacks and threads for these will contribute greatly to the solution of the problem.