



UDK 677.21.021

ANALYSIS OF RAW MATERIAL TRANSPORTATION IN COTTON GINSING ENTERPRISES

Doctor of Philosophy (PhD) in Technical Sciences

Mutalov Mukhammadodil Olimjon ugli

Doctoral student at Namangan State Technical University

Email: m.muhammadodil92@mail.ru

Abstract: The article presents an analysis of data on the pneumatic transport system and its elements, which are widely used in the process of intershop transportation of raw cotton brought by farms to ginneries.

Key words: pneumatic transport, pipe, cotton, raw material, fan, cyclone, separator.

Due to its advantages, pneumatic transport is considered progressive among transports, combining the practice of transportation with technological processes (drying, cooling, separation).

In cotton factories, a pneumatic transport consisting of a working pipeline (1) stationary sections (underground or suspended on reinforced concrete columns at a height of 6-8 m) is used, which make up 50% of the total volume of the transported parts, a separator (2) air suction device (3) a centrifugal fan of the VTS type (4) a device for removing processed air (5) and a cyclone (6) is used. The parameters, operating mode and VTS type separators have been studied relatively more and are the basis for practical and theoretical concepts in this field.

Pneumatic transport system

Currently, the widely used steel pipe pneumatic transport device has a number of disadvantages that negatively affect the efficiency of the operation, the quality of cotton and seeds, and the cost of the device.

These are: 1 a large amount of metal is consumed, large material costs when installing heavy pipes on trestles, corrosion under the influence of precipitation and mineral salts when laid underground (pipes quickly fail and require additional work). Due to the openness that remains when connecting the pipes, pressure loss (impossibility of tight connection) and reduced labor efficiency, with a change in the batch of cotton being transported, excessive labor consumption during the device movement, damage to cotton fiber and seeds.

A number of recommendations have been developed to eliminate some of the disadvantages. However, a new method of connecting pipes [4] that are



being moved is used at the cotton mill in Andijan. This method reduces labor costs somewhat and increases the efficiency of the pneumatic transport device.

The disadvantage of this method is that when the cross-sections are reduced, the pressure is lost, the pipes quickly become unusable, and in addition, several workers are needed during relocation and installation, despite the presence of wheels.

The disadvantage of this method: additional material costs, the lower part of the pipe quickly becomes unusable (the lower part of horizontally laid pipes quickly fails). Therefore, in order for all sides of the pipe to be in the same condition, the pipe is periodically rotated around its axis. This operation cannot be carried out using the method described above.

The stationary parts of the pipes are poured underground or suspended from trestles. Both methods have their disadvantages, depending on the pipe material.

Undergrounding is relatively convenient, as the open space within the plant area is not obstructed and does not impede movement. The pipeline is laid in trenches 600 - 700 mm deep. Protective barriers are installed at certain intervals along the entire length.

This system includes inspection wells and diversion wells directed to various storage facilities, equipped with a network device. To protect against corrosion, the pipe must be covered with asphalt. The disadvantage of a system installed underground is that it is difficult to carry out repair work when the pipe becomes unusable, corroded, exposed to precipitation and mineral salts, or clogged. These disadvantages do not occur when suspended on a trestle. However, obstacles in the area increase, and installation work requires significant costs.

It should be noted that mechanical devices used between workshops and workshops are justified, but this cannot be said in the conditions of the factory yard.

Open-air pneumatic transport, with its ease of movement, large radius of movement, and the ability to separate heavy waste of various mixtures, is currently unmatched in terms of transporting cotton from open fields to production and warehouses. Therefore, it is necessary to conduct research to eliminate the shortcomings and improve this type of transport.

REFERENCES

1. G.J. Jabborov, T.U. Otametov, A.Kh. Khamidov. "Technology of processing cotton with seeds" - Tashkent: O'kutty, 1987. pp. 98-100.
2. O.Sh. Sarimsakov "Improving the process of transferring cotton to pneumatic transport and transporting it by air. Monograph. Namangan 2018.



3. R. Muradov. Fundamentals of increasing the efficiency of air-transporting cotton. Monograph. Namangan, 2015., p. 12-124.