International Journal of Advance Scientific Research
(ISSN – 2750-1396)
VOLUME 02 ISSUE 11 Pages: 104-107
SJIF IMPACT FACTOR (2021: 5.478) (2022: 5.636)
METADATA IF – 7.356

Journal Website: http://sciencebring.com/index.php/ijasr

Research Article

ANALYSIS OF EFFECTIVENESS OF DRYING AND DUSTY AIR FILTERING USING DIGITAL TECHNOLOGY

Submission Date: November 05, 2022, **Accepted Date:** November 15, 2022,
Published Date: November 30, 2022
Crossref doi: https://doi.org/10.37547/ijasr-02-11-15

Mirzayev Baxromjon Maxmudovich
Assistant Of Fergana Polytechnic Institute, Fergana, Uzbekistan

ABSTRACT

This article includes suggestions for filtering the dusty air coming out of the drying drum installed in cotton ginning plants. The purpose of this is to reduce the ecological and environmental damage of cotton ginning enterprises.

KEYWORDS

Cotton ginning plants, drying drum, dusty air, filtration.

INTRODUCTION

Currently, several technologies are used in the cotton ginning enterprises of the Republic of Uzbekistan for drying seeded cotton. Among them, tower dryers, shelf dryers and drying drums are used. The most common of these are drying drums. cleaning departments at enterprises are currently equipped with 2SB-10, SBO and SBT drying drums for drying or heating seeded cotton. To ensure continuous operation of these drying drums, they are equipped with heating, transport and supply systems.

The main part

International Journal of Advance Scientific Research
(ISSN – 2750-1396)
VOLUME 02 ISSUE 11 Pages: 104-107
SJIF IMPACT FACTOR (2021: 5.478) (2022: 5.636)
METADATA IF – 7.356
ISSN-2750-1396

In order to use drying drums economically and rationally, it is necessary to control the temperature, size and humidity of seed cotton. At the same time, the degree of contamination of seed cotton, the amount of seed cotton passed along with impurities is also controlled. The 2SB-10 drying drum is similar in operation to the SBO-type drying drum, but because it does not have a cleaning section, it does not remove small impurities from seed cotton during the drying process. During the drying process in the drums, the heat is applied to the wet seed cotton. Heat can affect the wet cotton in three ways:

a) Due to the process of mixing with hot air during cotton seeding from drum shovels;

b) Due to the effect of heat on wet cotton falling between the shovels and on the shovels through the outer surface of the shovels;

c) due to the beneficial heat effect due to the transfer of heat from the heated parts of the drum and the drum to the seeded cotton;

It has structural strength, ease of operation and replacement of worn parts, long-term maintenance-free operation, and the possibility of automation. Multi-nozzle (slit) two-tunnel burners are installed on the gas burner. The mixing chamber consists of two tubes, one of which is made in the form of a cone, and the other - in the form of a truncated cone. To transfer the heat agent to the drying equipment, the heat generator is connected to the intake pipe of the DN-11.2 smoke hood. In this project that we offer, it is envisaged to filter the dusty air coming out of the drying drum. Let's get acquainted with this process below:

Bag filter with battery. The filtering element of this type of devices is made of woven material (Fig. 3).

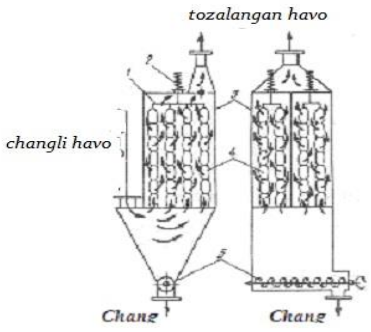

Figure 1. Sleeve filter.

1 - rum; 2 – shaking mechanism; 3 - shell; 4 - the most; 5 - auger.

International Journal of Advance Scientific Research
(ISSN – 2750-1396)
VOLUME 02 ISSUE 11 Pages: 104-107
SJIF IMPACT FACTOR (2021: 5.478) (2022: 5.636)
METADATA IF – 7.356
Crossref doi Google Scholar METADATA INDEXING WorldCat MENDELEY
ISSN-2750-1396

Filtering nets and bags 4 are hung on the general frame 1 of the rectangular shell 3. The dusty gas moving from the bottom to the top enters through the open hole at the end of the filter ends. Then, when the cylinder passes over the side surface of the cylinder, the gas is purified and leaves, and the solid particles are trapped on the inner wall of the cylinder.

During use, the dust layer increases and the resistance of the filter increases. To restore the filter sleeves, it is necessary to periodically shake them with the help of mechanism 2. Then, the dust that is lost on the surface of the nozzles is shed and taken out using the auger 5. In some cases, the filter elements are cleaned by blowing in the opposite direction using compressed air or gas to restore the filters. Sectional filters are also used in some cases. In this case, each section has a mechanism that shakes the track. This allows for continuous cleaning of filter sections, that is, it is possible to carry out the process of restoring filter elements without stopping the filter device.

The filtering speed of continuous filters is equal to 0.007...0.017m3/(m2.s). But, due to continuous renewal of filtering tissues

the filtering speed increases to 0.05...0.08 m3/(m2.s). The hydraulic resistance of the most common light filters is 1.5...2.5 kN/m2 (150...250 mm. above water.).

If sleeve filters are used correctly, the degree of cleaning of gases from fine, dispersed dust is 98...99%.

Sleeves are made of natural, synthetic and mineral materials. For example, cotton at temperatures below 80 °C is made of us, wool at temperatures below 110 °C, polyamide, polyethylene, polyacrylonitrile fibers at 130 ... 140 °C, polytetrafluoroethylene and fluoroplast at 275 °C, glass fibers at 400 °C filter sleeves are used.

In this way, we can direct the filtered air to the dehumidification or cleaning departments. However, if we take into account the frequent replacement of filters in this process, there is no possibility that the costs will exceed the standard.

REFERENCES

1. Ubaydullayev, M. M. (2022). Yangi defoliantlar hosildorlik garovi. Архив научных исследований, 2(1).
2. Mirzayev, B., & Esonzoda, S. (2021). Analysis of the use of hot air coming out of the drying drum. Innovative Technologica: Methodical Research Journal, 2(11), 6-13.
3. Mo'minjonovich, U. M. (2022). Effectiveness Of Defoliants. Eurasian Research Bulletin, 8, 9-12.
4. Umarali o'g'li, T. D., Sharipjanovich, S. O., & Mahmudovich, M. B. (2021). Theoretical research of the effect of damage and air transport working parts on cotton raw materials. Innovative Technologica: Methodical Research Journal, 2(12), 65-76.
5. Mominjonovich, U. M., & Ogli, M. I. V. (2022). Study and analysis of

International Journal of Advance Scientific Research
(ISSN – 2750-1396)
VOLUME 02 ISSUE 11 Pages: 104-107
SJIF IMPACT FACTOR (2021: 5.478) (2022: 5.636)
METADATA IF – 7.356
Crossref doi Google Scholar METADATA INDEXING WorldCat MENDELEY
ISSN-2750-1396

technological processes of cotton drying in a cluster system. International Journal of Advance Scientific Research, 2(11), 6-10.

6. Umarali o'g'li, T. D., Sharipjanovich, S. O., & Mahmudovich, M. B. (2021). Theoretical research of the effect of damage and air transport working parts on cotton raw materials. Innovative Technologica: Methodical Research Journal, 2(12), 65-76.
7. Ubaydullaev, M. M., & UT, T. (2022). Determination of appropriate norms and terms of defoliants. American Journal Of Applied Science And Technology, 2(05), 18-22.
8. Umarali o'g'li, T. D., Sharipjanovich, S. O., & Mahmudovich, M. B. (2021). Theoretical research of the effect of damage and air transport working parts on cotton raw materials. Innovative Technologica: Methodical Research Journal, 2(12), 65-76.
9. Ubaydullaev, M. M., & Makhmudova, G. O. (2022). Medium fiber s-8290 and s-6775 cotton agrotechnics of sowing varieties. European International Journal of Multidisciplinary Research and Management Studies, 2(05), 49-54.
10. Атоев, Э. Х., & Бердиева, З. М. (2021). Изучение устойчивости комплексных соединений металлов с некоторыми фосфорорганическими лигандами. Universum: химия и биология, (10-2 (88)), 6-8.
11. Xoshimova, M. X. Q., & Tursunuva, X. S. Q. (2021). Kombinatsiyalashgan yengli ayollar paltosining konstruktiv shakllari tahlili. Scientific progress, 2(8), 622-626.
12. Байкузиева, Г. А. (2019). Содержание и особенности структуры сельского хозяйства в регионах в условиях модернизации экономики. Проблемы современной науки и образования, (12-2 (145)), 102-105.
13. Ubaydullaev, M. M., & Komilov, J. N. (2022). Effect of defoliants for medium fiber cotton. International Journal of Advance Scientific Research, 2(05), 1-5.
14. Tursunova, K., & Fozilov, S. (2022). Research on the Development of Daily Clothing Sets for Teenage Girls from BI-Component Knitted Fabrics. Periodica Journal of Modern Philosophy, Social Sciences and Humanities, 12, 26-28.
15. Ubaydullaev, M. M., & Mahmutaliyev, I. V. (2022). Effectiveness of foreign and local defoliants on the opening of cups. International Journal of Advance Scientific Research, 2(05), 6-12.
16. Tursunova, K., & Fozilov, S. (2022). Research on the Development of Daily Clothing Sets for Teenage Girls from BI-Component Knitted Fabrics. Periodica Journal of Modern Philosophy, Social Sciences and Humanities, 12, 26-28.
17. Байкузиева, Г. А. (2019). Содержание и особенности структуры сельского хозяйства в регионах в условиях модернизации экономики. Проблемы современной науки и образования, (12-2 (145)), 102-105.