



**BASED ON THE PARAMETERS OF THE SPRAYING TRIPS OF THE
COMBINED SUSPENSION SPRAYING EQUIPMENT WHEN PROVIDING
BETWEEN THE COTTON ROW**

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Abstract

This article is devoted to the effective use of modern technologies and technical means in the fight against diseases and pests of agricultural crops in the country, improving the quality of processing.

Keywords: chemical working mixture; cotton; suspension; fan devices; agrochemical treatment; combined sprinklers.

Ушбу мақола республикамиз экин майдонларида ўсимликларга турли хил касалликларга ва зараркунандаларга қарши курашишда замонавий технология ва техник воситалардан самарали фойдаланиш, ишлов бериш сифатини ошириш жараёнларини такомиллаштиришга қаратилган.

Аннотация

Данная статья посвящена эффективному использованию современных технологий и технических средств в борьбе с болезнями и вредителями сельскохозяйственных культур в стране, повышении качества обработки.

The unity of agricultural crops depends on a variety of specific factors, and in the fight against diseases and pests, it is related to the timely application of chemical agents (pesticides) and suspensions to cotton. is Environmental protection causes severe air pollution when ventilators are used for chemical treatment injuries to Uzbeks. According to the current sanitary rules, the use of fan sprinklers is allowed at least 500 meters away from residential areas and recreation areas. Such a modern demand for plant treatment imposes important tasks on scientists to create high-efficiency, minimal air pollution and energy-efficient technology for perfect agrochemical treatment of cultivated fields.

When using imperfect agricultural techniques, the use of agrochemicals in the process of processing causes an increase in the consumption of working compounds and





worsens the ecological composition of the environment, increases energy consumption, and reduces economic efficiency.

In order to eliminate the above shortcomings, it is necessary to introduce chemical treatment techniques and combined techniques to the production of plants. It is effective to use mini-sprayers that spray the chemical mixture directly on the upper and lower sides of the cotton leaves, not in the air. Because when such devices are used, the environmental damage of chemical compounds is reduced from 500 meters to 200 meters. The reduction of the range of distribution of the chemical mixture into the environment during chemical processing allows processing of cultivated fields in places close to residential areas.

By using combined sprayers, the consumption of chemical working fluid distributed to the soil and the atmosphere and the damage to the environment, the negative impact on human health, will be reduced to the maximum. This, in turn, makes it possible to grow technical agricultural crops in areas close to the population. It can be said that the parameters of the spraying triplets depend on the consumption of the working liquid of the combined sprayer during cotton inter-row processing. Adjustment of sprayer triplets to a certain working order is carried out according to the consumption of the suspension sprayed on the cotton leaf, taking into account the speed of movement of the sprayer and the coverage width. Taking into account the above parameters, the three-way transmission consumption (m^3/c) is determined by the following formula.

$$q = 10^{-6} \frac{QBv}{n}; \quad (1)$$

Here, Q is the standard consumption of the working fluid, l/ha; B - coverage width of aggregate, m; v - unit speed, m/s; n is the number of triplets. The consumption of the liquid sprayed through the nozzles can be obtained by the formula (1), the spraying surface f (mm^2) of the liquid sprayed from the nozzle, the pressure of the working liquid in the tank P (MPa), and the following expression can be obtained.

$$q = 0.01\mu f \sqrt{2gP}; \quad (2)$$

Here, μ is the consumption coefficient depending on the type of triple, for centrifugal triples with a core, $\mu=0.41$; $\mu=0.27$ for conic and tangential centrifugal threes.



Taking into account that $f=pd^2/4$, the pressure P , the cross-sectional surface of the exit hole of the triple, for which certain conditions are required, shows the dependence of the working pressure P on the trunk and the speed of movement of the unit, i.e.

$$Q = 10^{-6} \mu z f \sqrt{\frac{2gP}{vB}} ; \quad (3)$$

The plane of coverage of the upper and lower parts of cotton leaves when treated with a chemical working mixture depends on the height on the surface of the combined suspension sprayer. The level of coverage of cotton leaf surfaces treated with a chemical working mixture or suspension depends on the location height of the combined device installed on the KXU-4 cultivator. According to agrotechnical requirements, the height H of the combined suspension sprinkler should be selected in such a way that the surface of the liquid sprayed from the spray cones, which ensures the uniformity of the amount of liquid consumption over the coverage width, should cover each other.

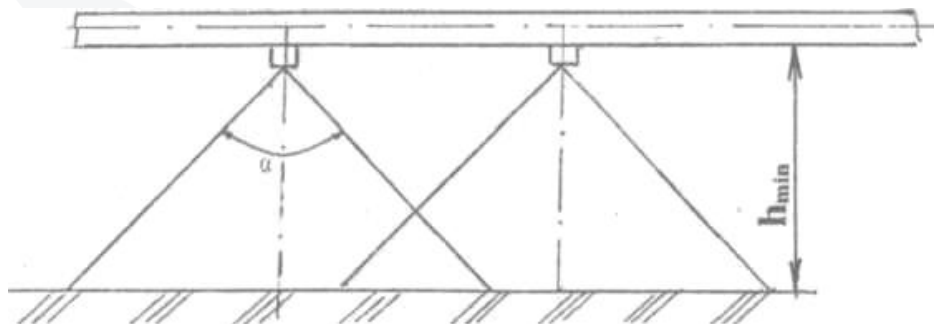


Figure 1. Scheme for determining the installation height of the combined suspension sprinkler on the KXU-4 cultivator.

The minimum installation height of the suspension sprinkler is determined by the formula in the sheep.

$$h_{\min} = \frac{\ell}{\operatorname{tg}\left(\frac{\alpha}{2}\right)} ; \quad (4)$$

where ℓ - the distance between the triples, m; Coverage width of the V-sprinkler device, m; n - number of triplets and α - spraying angle. The optimal placement height of the suspension and chemical working mixture spray device is expressed by the formula

$$15h = h_{\min} \leq h \leq h_{\max} = 80h ; \quad (5)$$



It can be concluded that, as a result of scientific research and experimentation, the optimal placement height of the combined suspension and chemical mixing device installed on the KXU-4 cultivator satisfies the expression (5).

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