Jurayev Akram Azamat ugli
Safarov Shermurod Normurod ugli
Turaev Saidali Sokhib ugli
Khusenov Ulmasbek Fayzullo ugli
Doctor of technical sciences, professor, Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, the Republic of Uzbekistan
Doctor of philosophy of technical sciences, PhD, Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, the Republic of Uzbekistan
External doctorate student, Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, the Republic of Uzbekistan
External doctorate student, Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, the Republic of Uzbekistan
Magister, Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, the Republic of Uzbekistan

DETERMINING THE CROSS PROFILE OF MANMADE PAWL AND FURROW BEFORE CREATING LONGITUDINAL PAWL BETWEEN COTTON ROWS

Abstract: *This article outlines the results of the theoretical research on the basis of the parameters of the working organs of the parameters of the construction of longitudinal pawl-creating device between cotton rows.*

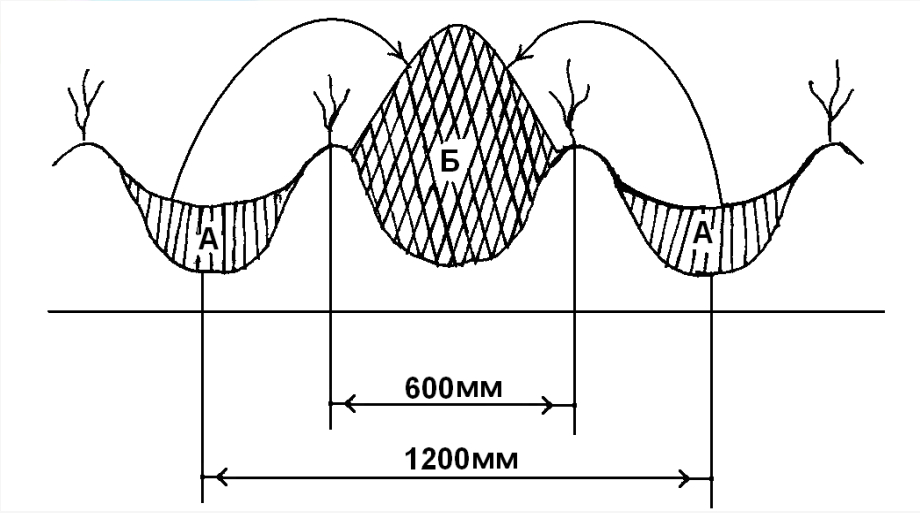
Key words: *Pawl, pawl-creating device, rising of soil corner, soil size, furrow profile.*

General land area of our Republic is 44890 thousand hectares. 50,4 % of them are agricultural land. Because of increasing technical improvements rapidly, modern science achievements of agriculture, advanced using of experiences in agriculture and scientifically based on agriculture system intensive degree of production is increasing. This can give an opportunity to improve soil productivity. [1].

Irrigated lands in our republic is productive, they consist of 3,8 million hectare. 98 % of agricultural products are grown in our country. [2]

Cotton areas of irrigated lands according to natural climate and soil condition, mechanic content of soil, technology of cultivation, types of machines, agro techniques demands are divided into three parts. First before irrigating longitudinal and cross pawl should be created, after irrigating on the purpose of cultivating cotton row cross pawls should be destroyed. [3]

Creating pawls device is considered furrow between cotton row which is impact on soil rising agro and energetic indications.



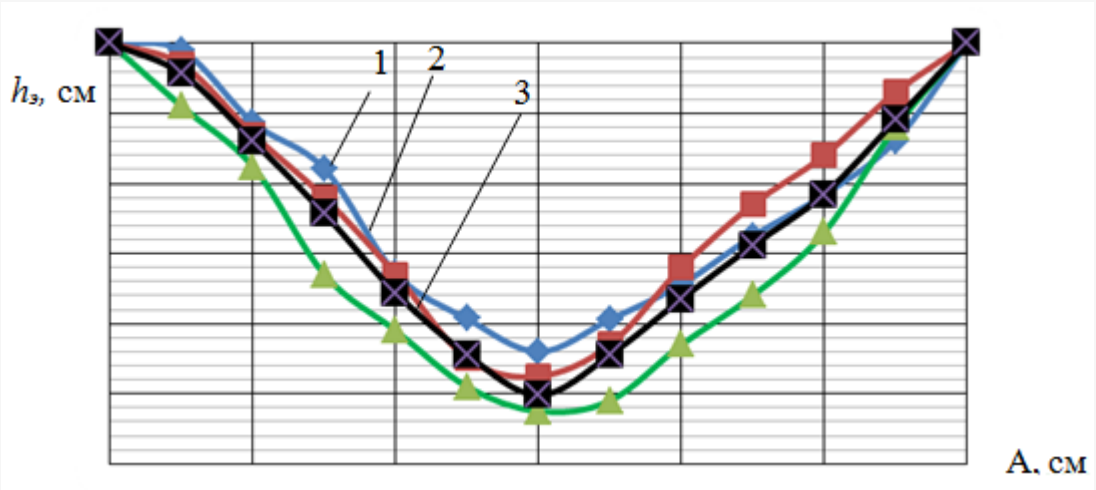
1- picture.The process of creating cross pawl between cotton rows

The process of creating cross pawl between cotton rows are made during vegetation third after cultivation and before creating irrigating furrow. In this period profile of cotton rows intervals are described with uneven relief, it will be in the view of furrow and garden-bed.

In the research work furrow deepnessr ($h_э$), furrow layer deepness (n) and corner of garden-bed side near furrow(ε) were determined.

Above mentioned indicators researches were carried out in the rows with intervals 60 sm fields of "Muhammad Chorukiy" in the village Bogikalon which is Bukhara district of Bukhara region. There were done sizing works by the help of profiler in side plan between 5 sm to take field profile.

All reselts which were taken from field experiences and coordinates system abscissa axis (X) between cotton rows (A)and deepness of furrow ($h_э$) according to its ordinates (Y) were collecting. Experements results are shown in 2-3 picture.



Formed furrow 1 minimal, 2 middle, 3 maximal deepness, 4 middle lines

2- picture. Furrow profile during pawl forming cotton rows.

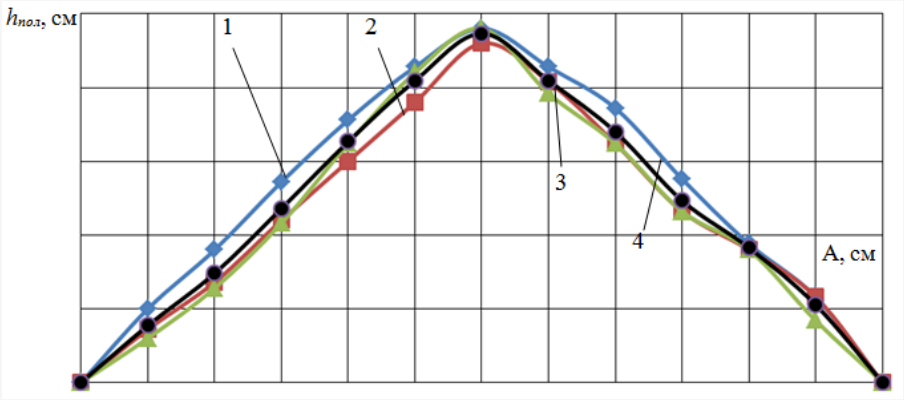
As it seemed from 2-picture furrow deepness minimal middle and maximal price 9.2

sm 10.5sm, 11,8 sm was determined.

Determine such pawl profile all experiments which were taken from fields were analyzed ordinates (Y) in coordinate system and abscissa (X) axis and wideness of cotton rows pawl height were collected. (3 picture)

3-picture. Determine the process of pawl profile between cotton rows.

Middle value of results were taken, formed pawls profiles were built and through it pawls across surface were determined (4-picture)



Formed pawls 1,2,3 size profile (black lines) (4) middle profile is shown.

4-picture. Formed cross profile between cotton rows.

In 4 picture formed pawls between cotton rows which has 60 sm. wildness was determined h_n=24,3 sm. This data refer to device determine demanding soil layer forming pawls.

Pawls altitude was identified according to use scheme between cotton rows garden-bed in 5 picture. According to this

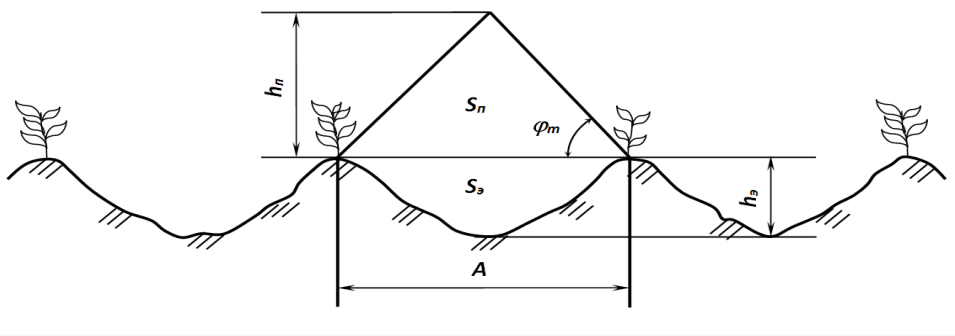
$$h_n = \frac{A}{2} tg\varphi_m \,, \qquad (1)$$

In this h_n – altitude proportion to top of garden-bed of f forming pawls between cotton rows;

A – wideness of between cotton rows (A=60 см)

φ_m –corner of the soil natural spill.

If we accept according to the given information φ_m=35-40° in literature [4, 5], (1) altitude of pawl's height will be 25,2 sm.



5- picture. Scheme to identify altitude and cross line surface of pawl.

Now we determine cross line surface of forming pawl. It consists of the sum of two surfaces, that is

$S_{ум}=S_п+S_э$, (2)

In this $S_п$ – upper triangular part surface of pawl;

$S_э$ – low furrow surface part of pawl.

3.3-according to scheme in the picture

$$S_n = \frac{Ah_n}{2} \quad (3)$$

Or we consider on (1)

$$S_n = \frac{A^2}{4} tg\varphi_m \quad (4)$$

Cross profile of cotton rows' intervals will change legally, $z = \frac{h_э}{2} \cdot (1 - \sin \frac{2\pi x}{m})$ we see it according to this example $S_э$

$$S_э = \int_0^A \frac{h_э}{2} \cdot (1 - \sin \frac{2\pi x}{A}) dx = \frac{h_э}{2} A, \quad (5)$$

In this $h_э$ –deepness of furrow between cotton rows , м

(4) and (5)we considered them (2)example will be following.

$$S_{ум} = \frac{A^2}{4} tg\varphi_m + \frac{h_э}{2} A = \frac{A}{2}(\frac{A}{2} tg\varphi_m + h_э). \quad (6)$$

The above calculations showed that the surface of the cross-sectional with a width of 0.6 m and a fence depth of 0.10 m between the rows of cotton was S_{um} = 0.106 m² (1055 cm²).

REFERENCES:

1. Murodov N.M, Olimov Kh. Kh. Murtazoev A.N. Mechanization of technological processes for for the formation of longitudinal ridges in the rows of cotton // International scientific magazine. Shkola Nauka. Russia. Moscow. 2019. No. 4 (15) str. 3-4.

2. Mukhtarov H., Kurbanov M., Otajonov Sh. Collection of materials of the Republican scientific-practical conference "Ecological aspects of rational use of land and water resources in irrigated agriculture". 2014 Bukhara. Pp. 321-322.

3. Rakhmatov B. Ikromova G. Yunusov Z. Recommendations for Cotton Farming Agrotechnics for Medium Fiber Crops "Bukhara-6", "Bukhara-8" and "Bukhara-102". Bukhara branch of UzPITI Bukhara. 2010.

4. Sergienko V.A. The study of loosening paws of cotton cultivators. Abstract. dis. ... cand. tech. sciences. - Tashkent, 1959.– From 10–22.

5. Sergienko V.A. Technologically advanced mechanization tools - Tashkent: Science, 1978. - 112 p.