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DETERMINATION OF THE SIZE OF THE HARNESS SOFTENING ZONE BETWEEN COTTON ROWS BY A SINGLE PROOF OF THE BINDER

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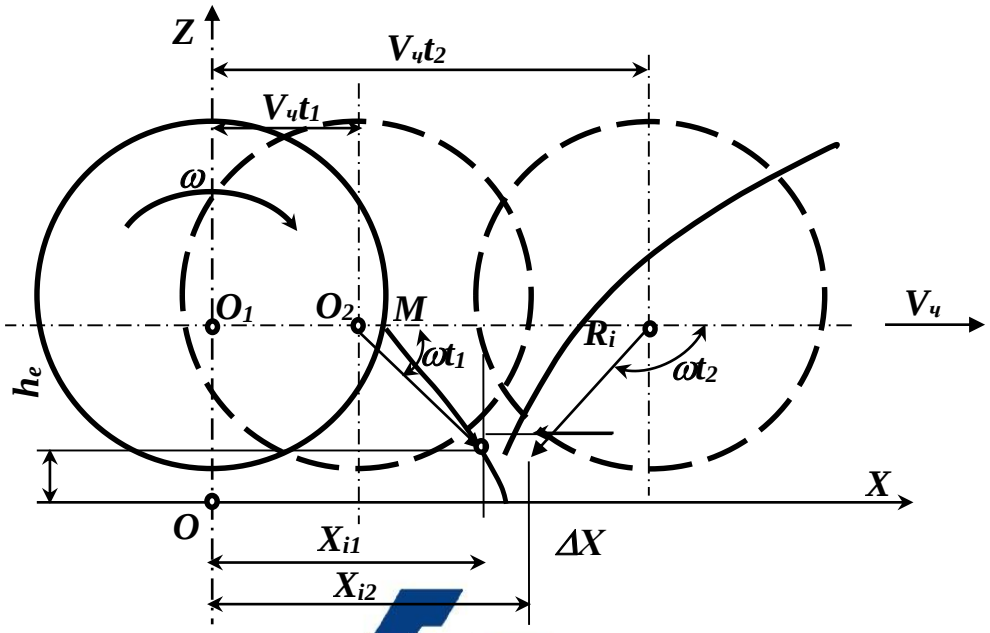
Abstract: The size of the curl softening zone by one piece of the roller, calculations showed that the size of the curl softening zone by one piece of the roller is 10-11 cm. It was determined that with the number of rods installed on the reel, the width of the reel coverage should be 50 cm. When fulfilling the condition, it was determined that the winding should be completely unraveled in the direction of movement, and the number of rods installed on the winding should be 10-12 pieces. The width of the roller coating should be 50 cm, which guarantees the absence of damage to the fibers.

Key words: cotton, bobbin, skein, skein softening, skein softening zone, tape width, seed, row.

The size of the zone of softening of friction by one protog of the roller ΔX (Fig. 1) using the following expression [5; p. 60].

$$\Delta X = R_i \left\{ \begin{array}{l} \dfrac{1}{1-K_c}\left[\pi - 2\arcsin\left(1-\dfrac{h}{R_i}\right)\right] - \\ -2\cos\arcsin\left(1-\dfrac{h}{R_i}\right) \end{array} \right\} + b_p, \quad (1)$$

in this K_c - go ahead slip coefficient; b_p – the width of the roller bar, m.



1 . The scheme for determining the softening zone of the coil by one protog of the roller

R_i = 0.125 – 0.165 m, K_c = 0.2, h = 0.05 and b_p = 0.014 m, calculations made according to the expression (1) show that the size of the zone of softening of the coil by one protog of the roller is 10 – 11 cm was determined to be

The number of rods to be installed on the reel

We determine the number of rods to be installed on the reel according to the following condition

$$n \geq \frac{2\pi R_i(1+K_c)}{\Delta X} \cdot (2)$$

When this condition is fulfilled, the complete smoothing of the coil is ensured by the roller in the direction of movement.

Taking into account the expression (1.1), the expression (1.2) has the following form:

$$n \geq \frac{2\pi R_i(1+K_c)}{R_i\left\{\begin{array}{l}\frac{1}{1-K_c}\left[\pi - 2\arcsin\left(1-\frac{h}{R_i}\right)\right]- \\ -2\cos\arcsin\left(1-\frac{h}{R_i}\right)\end{array}\right\}+b_p} . (3)$$

By substituting the values of R_i = 0,125 – 0,165 m, K_c = 0,2, h = 0,05 va b_p = 0,014 m into this expression, we determine that the number of rods mounted on the reel should be 10 - 12.

The coverage width of the reel

We determine the coverage width of the coil according to the following expression:

$$B = M - 2\Delta, (4)$$

where M is the width of seeded rows (between cotton rows), m;

Δ– the width of the roller protection zone, m.

M = 60 cm, Δ= 5 cm [11; pp. 64-65, 13; p. 146] values, we determine that according to expression (4) the coverage width of the coil should be 50 cm.

References:

1. Aminov SA. Diss.... cand. tech science - July, 1988. - 130 p.

2. Sineokov GN, Panov IM Theory and raschet pochvoobrabativyushikh machine. - M.: Mashinostroenie, 1977. - 328 p.
3. Tukhtakuziev A., Khudoyarov B., Utepbergenov B., Kengesbaev R. Teoreticheskoe obosnovanie parametrov katka kombinirovannoy mashini // Academy of Sciences of the Republic of Uzbekistan Karakalpak department "BULLETIN" - Nukus - 2018. - #2. - B. 16-18.
4. Shapar MS Vliyanie skorosti dvigeniya vibrokatka na ravnomernost uplotneniya pochvi / MS Shapar, SA Shishlov //Traktori i selskohozyaystvennie mashini, 2013. - No. 5. - S. 7-8.
5. Saakyan SS Selskohozyaystvennie machine. Construction, theory and raschet. Mashini dlya obrabotki pochvi, poseva i posadki, vnesenia udobreniy, dlya borbi s vreditelyami i boleznyami selskohozyaystvennih rasteniy. - M.: Selkhozizdat, 1962. - 328 p.
6. Patent 2122302 Russian Federation, MPK A01B 49/02. Kombinirovannoe pochvoobrabativayushee orudie / VB Rikov, VI Taranin, AA Bertov; zayavitel i patentoobladatel Vserossiyskiy nauchno-issledovatelskii i proektno-technologicheskii institut mechanizasii i elektrifikasi selskoho hozyaystva. – No. 97121829/13; lazy 15.12.1997; publ. 27.11.1998, Byul. No. 43.
7. Patent 129331 Russian Federation, MPK A01B 29/04. Pochvoobrabativayushiy katok / VI Kurdyumov, IA Sharonov, E.N. Proshkin, V.E. Proshkin; zayavitel i patentoobladatel FGBOU VPO "Ulyanovskaya GSXA". – No. 2012105722/13; lazy 17.02.2012; publ. 27.06.2013, Byul. No. 18.
8. Obosnovanie proesssa samoochisheniya spiralnogo nevmaticheskogo katka ot nalipshey pochvi / AS Putrin, VN Varavva, ZI Izbasarova, GL Utenkov // Izvestia Orenburg. GAU. - 2009. - No. 2. - P. 130-135.
9. Nikolaev VA Vibor vesa katka dlya prikativaniya pochvi // Tractor i s.-x. machine - 2007. - No. 3. - P. 28-29. 121.
10. Novie tekhnologii obrabotki pochvi / IB Borisenko [i dr.] // Izve- 143 stiya Nizhnevoljskogo agrouniversitetskogo komplexa: Nauka i visshee professionalnoe obrazovanie. – 2012. – No. 1. – P. 14–16. 122.
11. O bosnovanie proesssa samoochisheniya spiralnogo nevmaticheskogo katka ot nalipshey pochvi / AS Putrin, VN Varavva, ZI Izbasarova, GL Utenkov // Izvestia Orenburg. GAU. - 2009. - No. 2. - P. 130-135.
12. Auezov O.P., Artikbaev BP Influence of the disk of the working organ on the degree of plant damage and destruction of the soil cork Proceedings of the conference: 20 volumes of the Fairness of the Republic of Uzbekistan will be dedicated. - Nokis: TashMAU NF, 2011. - S. 81-84. 7.
13. Artikbaev BP Vliyanie skorosti dvizheniya aggregata na stepen povrejdeniya rastenii i razrusheniya pochvennoy korki // Introduction of new cost-effective agrotechnologies in agriculture. Collection of lectures of the republican scientific-practical conference. - Tashkent: UzPITI, 2011. - P. 348.
14. Auezov O., Nurabaev B., Artikbaev B. Noviy sposob borbi s pochvennoy korkoy na posevax selskohozyaystvennix kultur // AGRO ILM. - Tashkent, 2009. - 2[10]. - S. 61.
15. Artikbaev BP The influence of precipitation on the size of the crop // Status, problems and development prospects of vegetable, vegetable and potato growing: a collection of articles of the international scientific and practical conference. Tashkent. 2018. – B. 82-84.