

USE OF COTTON PICKING MACHINES IN UZBEKISTAN

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Introduction

Uzbekistan Republic in the economy village agriculture , especially cotton farming field important place Cotton not only of the country main export product , maybe light industry raw material as well as strategic importance has . Therefore cotton cultivation and picking and gathering to take processes mechanization republic agrotechnician of the policy priority from directions one is considered . Last in years cotton dial of cars wide application labor fertility increase , harvest short in terms of time and good quality collecting to take opportunity is giving .

Cotton dial of cars importance

Traditional hand from work use very many time and requires resources . However modern cotton dial machines :

Productivity increases – one car one on the day an average of 50–60 people his/her work does ;

Cotton good quality gathers – in the field of cotton mold to leave reduces ;

Labor expenses shortens – worker to the power was need reduces ;

Harvest fast collecting to take opportunity gives , this and weather from the influence come outgoing losses reduces .

In Uzbekistan cotton dial machines types

In Uzbekistan mainly following cars wide is being used :

CHTPZ and “Case IH” type cotton dial cars – high productivity and modern technologies with separated stands .

Local working issued cars (Pakhtakor-1, Pakhtakor-2) – Uzbekistan to the conditions customized to be , to serve show expenses relatively cheap

China and Turkey working issuer of companies techniques – some in the regions from the test is being held .

Practical application

Currently of the republic all cotton clusters cotton harvest mechanization according to programs done is increasing . Statistics to the information According to , cotton in 2023 of the harvest about 70 percent cars using picking taken If so , by 2025 this indicator from 90 percent increase is expected .

From cars effective use for following to factors attention being addressed :

Cotton varieties to the car adaptation ;

Land areas leveling and agrotechnician events thorough to do ;

Technical service to show modern system current to grow ;

Operators qualification increase

Problems and solutions

Machines wide to be used despite some There are also difficulties :
Techniques expensive and them purchase to do for big Funding requirement ;
Some in the regions of the fields unevenness car work fertility reduce ;
Service services enough at the level on the road not being placed .
This problems eliminate to grow for local working to release development , service services
expansion and cotton cultivation technologies adaptation necessary .

Cotton dial of cars efficiency following main indicators through is evaluated :

Machine Efficiency (W):

$$W = \frac{Q}{T}$$

this on the ground :

Q – collect taken cotton quantity (kg or t),

T – spent time (hour).

Productivity (P) :

$$P = B \cdot V \cdot K$$

this on the ground :

B– car coverage width (m),

V – worker speed (m/s),

K – use coefficient .

Cotton collection quality coefficient (K_s):

$$K_s = \frac{Q_m}{Q_u} \cdot 100\%$$

this on the ground :

Q_m – car using assembled cotton (kg),

Q_u – general yield (kg).

Labor fertility increase coefficient (K_m):

$$K_m = \frac{W_m}{W_{hand}}$$

this on the ground :

W_m – car productivity (kg/ h),

W_{hand} - hand labor productivity (kg/ hour).

Calculations

If the Case IH 2555 cotton dial car in 1 hour average 3.5 tons of cotton collect and hand in labor one A worker can produce 60 kg of cotton in 1 day (8 hours). torso :

Machine productivity :

$$W = \frac{3500}{1} = 3500 \text{ kg/h}$$

Hand labor productivity :

$$W_{\text{hand}} = \frac{60}{8} = 7,5 \text{ kg/h}$$

Labor productivity increase coefficient :

$$K_m = \frac{3500}{7,5} \approx 467$$

So, one piece car one per hour about 467 workers his/her work will do .

Machines using collecting taken of cotton average quality The index $K_s = 92-95\%$.

Cotton in the harvest losses hand to work 2–3 times more than less

From cars use labor up to 60–70% of their expenses shortens .

Conclusion

In Uzbekistan cotton dial of cars application village on the farm efficiency in increasing important factor become service is doing . Mechanization process cotton farming modernization to do , to work resources saving and the harvest good quality collecting to take opportunity is giving . In the future technician service show system further development , local working to release support and new technologies current to grow through cotton dial of cars efficiency further increase possible .