Pindus Journal of Culture, Literature, and ELT
ISSN: 2792 – 1883 | Volume 3 No. 5
https://literature.academicjournal.io

Scientific and Technical Solutions for Soil Tillage Machines with Working Bodies Permanently Attached To the Frame and Having a Support Device

D. Karimova, (PhD)
O. Turgunova, M. Ismailov, (a student)

Abstract: The immersion of soil tillage machines fixed to the frame and their stable running at this depth is ensured due to the correct selection of the vertical distance from their base plane to the lower suspension points.

Keywords: Frame, hanging plow, chisel-cultivator, pressure, depth, support wheels.

Soil tillage machines (suspended plow and chisel cultivator) whose working bodies are fixedly attached to the frame and have a support device have their support wheel (wheels) to work at a specified depth and to run stably (uniformly) at this depth.) must be constantly pressed against the field surface, and its (their), i.e. support wheel (wheels) vertical pressure force on the soil must have a certain acceptable value.

According to the results of the research conducted by P.N. Bruchenko, the value of Q_M^n for suspended tillage machines should be in the range of 2.0-5.5 kN, depending on their working depth. Here, a small value of Q_M^n is accepted for weakly concentrated fields, a medium value for moderately concentrated fields, and a high value for medium concentrated fields.

According to the results obtained in our research, the condition for the suspension plow and chisel-cultivator, and therefore their operation to a specified depth and stable movement at this depth, is mainly from their base plane to the lower suspension points. vertical distances are provided by changing H_n and H_{ch} (Figures 1.1 and 1.2). As these distances increase, the depth of processing until the base wheels touch the ground surface increases, its stability improves, and the opposite is observed when it decreases.

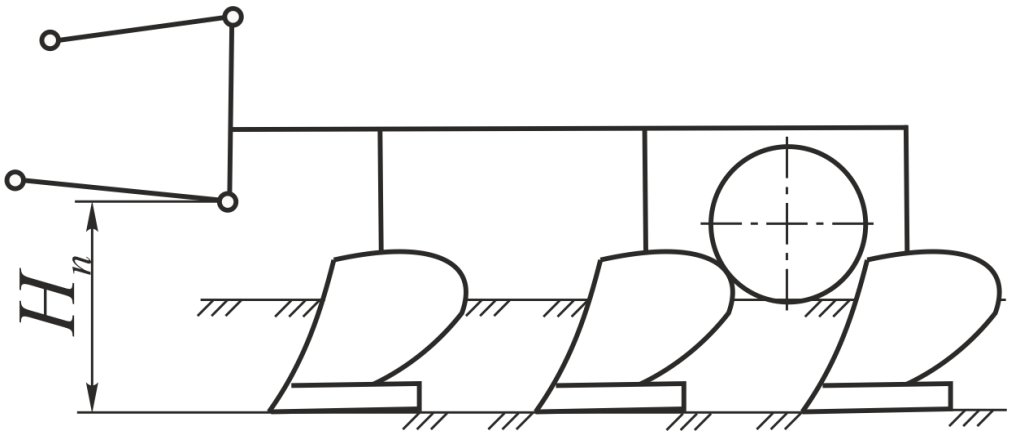

Figure 1.1. Scheme of a scientific-technical solution for suspension plug.

ISSN 2792-1883 (online), Published in Vol: 3 No: 5 for the month of May-2023

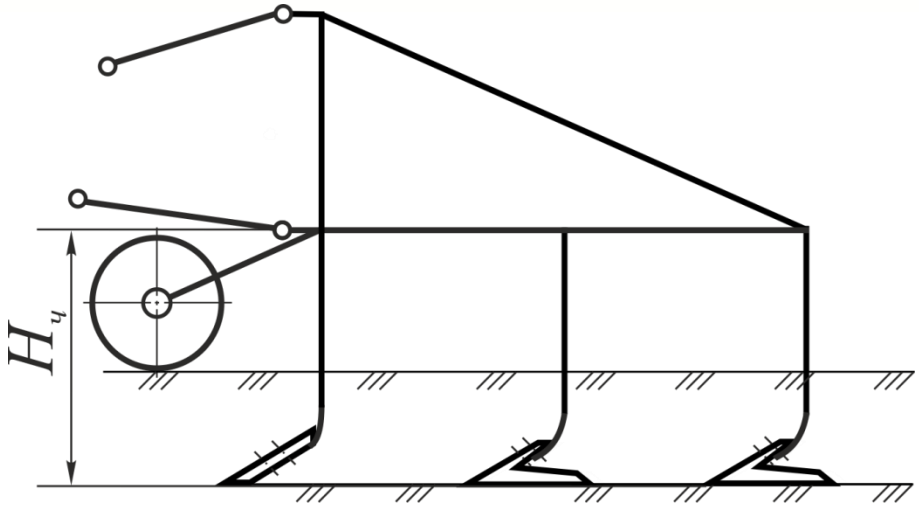

Figure 1.2. Scheme of a scientific and technical solution for a suspended chisel-cultivator.

The distances H_n and H_{ch} were changed by increasing or decreasing the height of the lower suspension points of the plow and chisel-cultivator in relation to their support.

Summary:

Scientific and technical solutions developed to eliminate the influence of physical and mechanical properties of the soil and the speed of aggregate movement on the working depth of the existing soil tillage machines with fixed and movable bodies attached to the frame and its flatness. According to:

- the sinking of the working bodies connected to the frame by means of parallelogram mechanisms to the specified processing depth and their stable movement at this depth is achieved by ensuring that the longitudinal pulls of the parallelogram mechanisms occupy a horizontal position or close to it during the work process.

References:

1. Baymetov R.I., Tukhtakuziev A., Akhmetov A.A. Obosnovanie tipa i parametrovnych mechanizka naveski universalnogo doposevnogo orudiya // Issle-dovaniya po optimizatsii mekhanizirovannyx protsessov v khlopkovodstve. Sat. tr. /SAIME. - Tashkent, 1989. - Vyp. 31. - S. 31-37.
2. Tukhtakuziev A., Ibragimov A., Atamkulov A. Issledovanie ravno-mernosti glubiny hoda borozdoreza seyalki dlya seva zernovyx v polivnom zemledelii // Technika v selskom hozyyastve. - Moscow, 2014. - No. 5. - S.2-3.
3. Tokhtakoziyev A., Abdulkhayev X, Karimova D. Investigation of steady movement of working bodies on depth of processing that connected with frame by means of parallelogram mechanism// Journal of Critical Reviews, May 2020 Scopus 7 (14) , pages 573-576. doi:10.31838/jcr.07.14.98
4. Tokhtaqo'ziyev A., Karimova D., Sultanov Z.U., Ozodmirzaeva Sh., Abdunabiyeva F. Scientifis-techniquye toensure thestable movement of working body ess onne stedbyt heramaand parallelogram mechanism sof soiltreatment machines // InnovativeTechnologisa. Methodisal research journal, Volume 2, Issue May 5, 2021. https://it.asademiassiyense.org/index.php/it/artisle/viyew/69.

ISSN 2792-1883 (online), Published in Vol: 3 No: 5 for the month of May-2023

5. Karimova D. Rezultaty ispytaniy zubavoy sektsii orudiya dlya obrabotki grebney // Proceedings of the 2nd International Scientific and Practical Conference scientific community: Interdisciplinary research Hamburg. Germany January, 2021.-№; 40.-B. 521-522.
6. Karimova D. Cotton cultivators working bodies ensuring stable movement through the depth of processing // Journal of Positive School Psychology http://journalppw.com 2022, Vol. 6, No. 11.
7. Karimova D., O. Turgunova The study of the uniformity of the depth of immersion of the roller, a universal device used in tillage before planting // Polsha Jurnali. Miasto Przyszłości Impact factor: 9.2 ISSN: 2544-980X Journal website:https://miastoprzyszlosci.com.pl/index.php/mp/index http://miastoprzyszlosci.com.pl/index.php/mp/article/view/702/646

ISSN 2792-1883 (online), Published in Vol: 3 No: 5 for the month of May-2023