UDC: 621.3.71

INFLUENCE OF TRACTOR TIRES LOAD-CARRYING CAPACITY ON PERFORMANCE QUALITY

Akbarov S.A
Namangan Institute of Engineering and Construction student

Ключевые слова: *Трактор, колесо, шина, эгата, размер, метрологическая, нагрузка, радиальная, деформация, контактная, диаграмма, эмпирическая.*

Annotation: *This article highlights information on determining the quality of processing in cases related to the pressure exerted on the soil by wheeled tractors during plowing, and the metrological dimensions of tires.*

Key words: *Tractor, wheel, tire, egate, size, metrological, load, radial, deformation, contact, diagram, empirical.*

The load-carrying characteristics of tractor tires during cotton processing are determined by the values of the area F- contact trace; average pressure - pўр and the maximum pressure at this point. Tire under normal (radial) load Q - base point with the field F- is formed. The radial strain diagram, contact trace shape, and principal pressure diagram are shown in Figure 1.

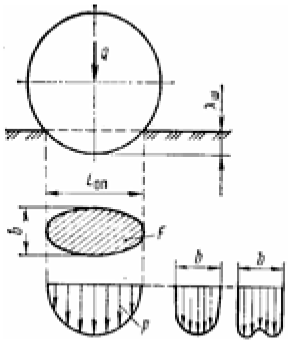

Figure 1. Radial deformation and loading scheme of the tractor wheel

Usually, the value of the pressure in the field – F of the contact surface is determined by the largest radial deformation of the tire - λш , is called the normal (radial) deformation of the tire. To estimate field values – tires and normal deformation - λш of the support of the tires F , Several empirical formulas are used. The main ones take the same position.

ш = г • с•Q / (• Pc); (1)

Ғ = • ш = Q • c • г / pc . (2)

if λг - coefficient that takes into account the stiffness of the base on which the tires rest. Usually 0,7 г 1; c - the coefficient is directly proportional to the width - b контактли жойи, босим pc шиналардаги ҳаво ва юкга тескари пропорционал - Q; D - the free diameter of the tire.

The value at the point of collision - F контакти биринчи навбатда ғилдиракдаги нормал юкга, шиналар кенглигига, ундаги ҳаво босимига ва ёнининг мустаҳкамлигига боғлиқ, бундай ҳолда, контакт изидаги босим нотекис тақсимланади. Одатда, трактор шиналари умумий контакт майдонининг 30 % дан кўп бўлмаган айланиш майдонига эга.

The value of the footprint left by the tire tread on the soil depends on the pressure force acting on the soil and the profile of the tire (Figure 2).

A ratio to describe the main characteristics of a tire - Q/λш is used and is called the radial stiffness of the tire.

Formula (2), as shown, gives the relationship between the main characteristics and the load on the tire. A more reliable formula for pneumatic wheels of agricultural machines V.V. Smilsky is based on the processing of experimental data using the methods of similarity and measure theory:

Q = (pс + pэ) z0,5 (D • bd//Bш) ш ш / H,

If pс - tire air pressure, кПа; pэ - pressure equivalent to the hardness of the tread layer at different deformations of the tire, кПа for tractor tires, in the calculation (pэ 110 кПа) can be obtained; z - the number of cord layers in the tire; D, bd , Bш H - respectively, the free diameter, disc width and height of the pneumatic tire profile, м; ш - tire radial deformation, м.

The size of the load carrying capacity of the tire is the maximum permissible value of the normal load – Qкўш, for the case where radial deformation is not taken into account - ш, the specified service life of the tire is provided at a certain value of the air pressure in it.

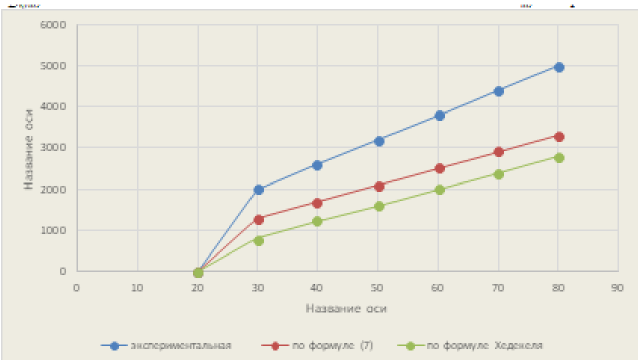

Figure 2. Load capacity of pneumatic tires

1). Theoretical calculation; 2). 9,5-42 Я-183 experimental;

3). 13,6 R38 ЯР-318; 4). 15,5-38 Я-166; 5). 18,4/15-30 R-319.

Thus, the total loss of resistance of our analyzes is the speed of the tractor, the distance traveled S □ 1,5 α (α - base area), Shows rolling resistance according to tire types, tire air pressure, deformation values, impact force, tread thickness, etc.

As a result of maintaining the condition of the tractor wheel, we have achieved the quality of the cotton processing processes. To fully understand the interaction of the cotton bush with the leading wheel, we determined the cross-sectional profile of the cotton bush (Figure 3). Row spacing during normal cultivation of cotton 0,6 and 0,9 м was carried out. To carry out the measurements, a uniformly developing plot of cotton was selected and measurements were taken from five places of the plot.

Figure 3. Profile of a cotton bush (tupi).

Measurements per 0,1 м height was carried out and the data obtained were recorded and processed in the observation log.

Row spacing 0,6 and 0,9 м was carried out using the method of studying the effect of stem size on the damage level of cotton..

In order to study the effect of plant size on the damage rate of cotton, the following cultivation background 3 and 4 0,6 м between rows, 9,5-42 Я-183 and 13,6 R38 ЯР-318, 15,5-38 Я-166 between rows 0,9 м. If, 3 and 4 in the background of cultivation, 9,5-42 Я-183 model; 13,6 R38 ЯР-318 model; 15,5-38 Я-166; 18,4/15-30 R-319 model. In order to exclude the influence of the leading wheel and the physiological state of the cotton, the experiments were carried out on tractors equipped with a device for protecting the cotton bush from the wheel (obtekatel).

Field characteristics were studied before the experiments. In the section selected along the length, 3 sections with a length of 10 m each were selected. In the registration plots in the rows where the tractor's leading wheels should pass, the number of pods in the hub and the number of pods were counted before each tractor pass. Invalid (damaged) branches were removed from the stem. All experiments were repeated three times.

The study was carried out in cultivation backgrounds 3 and 4 at 1.33 and 1.80 m/s, respectively. The results of the research were recorded in the observation journal, and based on the results of the processing, the correct selection of the tensioner (power) and tires in terms of metrological dimensions in the processing of cotton allows to increase the quality of work.

REFERENCES:

1. Tsoy, D., Tirasawasdichai, T., & Kurpayanidi, K. I. (2021). Role of social media in shaping public risk perception during COVID-19 pandemic: A theoretical review. International Journal of Management Science and Business Administration, 7(2), 35-41.
2. Ivanovich, K. K. (2020). About some questions of classification of institutional conditions determining the structure of doing business in Uzbekistan. South Asian Journal of Marketing & Management Research, 10(5), 17-28.
3. Kurpayanidi, K. I. (2019). Theoretical basis of management of innovative activity of industrial corporation. ISJ Theoretical & Applied Science, 1(69), 7.

4. Kurpayanidi, K. I. (2020). ACTUAL PROBLEMS OF IMPLEMENTATION OF INVESTMENT INDUSTRIAL ENTREPRENEURIAL POTENTIAL. Theoretical & Applied Science, (1), 301-307.

5. Икрамов, М. А., Абдуллаев, А. М., & Курпаяниди, К. И. (2013). Некоторые вопросы государственного регламента инновационного процесса: зарубежный опыт и практика Узбекистана. Инновационная экономика: перспективы развития и совершенствования, (2 (2)), 198-205.

6. Margianti, E. S., Ikramov, M. A., Abdullaev, A. M., Kurpayanidi, K. I., & Ashurov, M. S. (2014). Systematical analysis of the position and further development of Uzbekistan national industry in the case of economic modernization.-Monograph. Indonesia, Jakarta.

7. Kurpayanidi, K. (2021). National innovation system as a key factor in the sustainable development of the economy of Uzbekistan. In E3S Web of Conferences (Vol. 258, p. 05026). EDP Sciences.

8. Kurpayanidi, K. I. (2020). To the problem of doing business in the conditions of the digital economy. ISJ Theoretical & Applied Science, 9(89), 1.

9. Kurpayanidi, K. I. (2020). Corporate industry analysis of the effectiveness of entrepreneurship subjects in the conditions of innovative activity. Экономика и бизнес: теория и практика, (2-1), 164-166.

10. Kurpayanidi, K., Abdullaev, A., Ashurov, M., Tukhtasinova, M., & Shakirova, Y. (2020). The issue of a competitive national innovative system formation in Uzbekistan. In E3S Web of Conferences (Vol. 159, p. 04024). EDP Sciences.

11. Kurpayanidi, K. I. (2018). Questions of classification of institutional conditions, determining the structure of business management in Uzbekistan. ISJ Theoretical & Applied Science, 9(65), 1.

12. Tkach, D. V. Y., & Kurpayanidi, K. I. (2020). SOME QUESTIONS ABOUT THE IMPACT OF THE COVID-19 PANDEMIC ON THE DEVELOPMENT OF BUSINESS ENTITIES. Theoretical & Applied Science, (11), 1-4.

13. Kurpayanidi, K. I. (2020). ON THE PROBLEM OF MACROECONOMIC ANALYSIS AND FORECASTING OF THE ECONOMY. Theoretical & Applied Science, (3), 1-6.

14. Muminova, E., Honkeldiyeva, G., Kurpayanidi, K., Akhunova, S., & Hamdamova, S. (2020). Features of introducing blockchain technology in digital economy developing conditions in Uzbekistan. In E3S Web of Conferences (Vol. 159, p. 04023). EDP Sciences.

15. Kussy, M. Y., Pobirchenko, V. V., Shutaieva, E. A., & Kakutich, Y. Y. (2018). Blockchain technologies as a stimulator of institutional transformations of the world financial system. International Journal of Engineering and Technology (UAE), 7(3.14), 354-359.

16. Kurpayanidi, K. I. (2018). The typology of factors of increasing the innovative activity of enterprise entrepreneurs in the industry. ISJ Theoretical & Applied Science, 10(66), 1.

17. Kurpayanidi, K. I. (2021). Financial and economic mechanism and its role in the development of entrepreneurship. ISJ Theoretical & Applied Science, 1(93), 1-7.

18. Kurpayanidi, K. I. (2020). PROBLEMS OF THE USE OF DIGITAL TECHNOLOGIES IN INDUSTRY IN THE CONTEXT OF INCREASING THE EXPORT POTENTIAL OF THE COUNTRY. Theoretical & Applied Science, (10), 113-117.

19. Ivanovic, K. K., Qizi, M. Z. M., Ogli, T. I. S., & Musajonovichv, N. F. (2019). To the question of science approach to the construction of outsourcing business model of modern enterprise structure. Достижения науки и образования, (7 (48)), 22-25.

20. Abdullayev, A. M., & Kurpayanidi, K. I. (2020). Analysis of industrial enterprise management systems: essence, methodology and problems. Journal of Critical Reviews, 7(14), 1254-1260.

21. Margianti, E. S., Ikramov, M. A., Abdullaev, A. M., Kurpayanidi, K. I., & Misdiyono, M. (2020). Role of goal orientation as a predictor of social capital: Practical suggestions for the development of team cohesiveness in SME's. Monograph. Gunadarma Pulisher, Indonesia.

22. Kurpayanidi, K. I., & Mukhsinova, S. O. (2021). The problem of optimal distribution of economic resources. ISJ Theoretical & Applied Science, 1(93), 14-22.

23. Kurpayanidi, K., & Abdullaev, A. (2021). Covid-19 pandemic in central Asia: policy and environmental implications and responses for SMES support in Uzbekistan. In E3S Web of Conferences (Vol. 258, p. 05027). EDP Sciences.

24. Margianti, E. S., Ikramov, M. A., Abdullaev, A. M., Kurpayanidi, K. I., Misdiyono, M., & Khudayqulov, A. (2020). Role of goal orientation as a predictor of social capital: Practical suggestions for the development of team cohesiveness in SME's. Monograph. Gunadarma Pulisher, Indonesia.

25. Kurpayanidi, K. I. (2021). Stimulation of foreign economic activities of entrepreneurship on the basis of innovative development. ISJ Theoretical & Applied Science, 1(93), 8-13.

26. Kurpayanidi, K. I. (2021). The institutional environment of small business: opportunities and limitations. ISJ Theoretical & Applied Science, 9(101), 1-9.

27. Kurpayanidi, K. I., Muminova, E., & Paygamov, R. R. (2016). Management of innovative activity on industrial corporations. LAP Lambert Academic Publishing GmbH & Co.

28. Abdullaev, A. M., & Kurpayanidi, K. I. (2019). Actual issues of activization of financial factors development of entrepreneurship in Uzbekistan. Kazakhstan Science Journal, 2(3), 49-58.

29. Курпаяниди, К. И. (2018). К вопросам оценки эффективности предпринимательства в рейтинге FORBES" лучшие страны для бизнеса"(на материалах Республики Узбекистан). Бюллетень науки и практики, 4(3), 193-202.

30. Farid, M. (2007). Entrepreneurship in Egypt and the US compared: directions for further research suggested. Journal of Management Development, 26(5), 428-440.

31. Kurpayanidi, K. I. (2021). The evolution of scientific and theoretical ideas about entrepreneurship. Logistics and economics. Scientific electronic journal, 3, 178-185.

32. Курпаяниди, К. И., & Ашуров, М. С. (2019). Ўзбекистонда тадбиркорлик муҳитининг замонавий ҳолати ва уни самарали ривожлантириш муаммоларини баҳолаш. Монография. GlobeEdit Academic Publishing, European Union.

33. Kurpayanidi, K. I., Abdullaev, A. M., Nabieva, N. M., Muminova, E. A., & Honkeldieva, G. S. (2020). Economic and social policies during Covid-19 period: Relief plan of Uzbekistan. International Journal of Advanced Science and Technology, 29(06), 5910-5921.

34. Курпаяниди, К. И. (2021). Создание малых предприятий: саморазвитие или интеграционное развитие, какой путь выбирают страны мира. Проблемы современной экономики, 3(7), 9.

35. Курпаяниди, К. И. (2021). Современные концепции и модели развития предпринимательства. Бюллетень науки и практики, 7(9), 425-444.

36. Kurpayanidi, K. I. (2020). To issues of development of entrepreneurship in the regions: theory and practice of Uzbekistan (on the materials of Andizhan region). ISJ Theoretical & Applied Science, 6(86), 1-10.

37. Kurpayanidi, K. I. (2020). Some issues of macroeconomic analysis and forecasting of the economy of Uzbekistan. Iqtisodiyot va innovatsion texnologiyalar. Ilmiy elektron jurnali, 2, 100-108.

38. Курпаяниди, К. (2021). Актуальные вопросы цифровизации в индустриальном секторе экономики Узбекистана. Общество и инновации, 2(4/S), 201-212.

39. Абдуллаев, А. М., Курпаяниди, К. И., Тешабаев, А. Э., & Солиева, Д. А. (2020). Исследование систем управления предприятием: сущность, методы и проблемы. Бюллетень науки и практики, 6(2), 182-192.

40. Kurpayanidi, K. I., Abdullaev, A. M., & Khudaykulov, A. (2020). Challenges of coping with the economic consequences of the global pandemic COVID-19. ISJ Theoretical & Applied Science, 5(85), 1.

41. Konstantin, K. (2015). Innovation component of the business environment as a factor enhancing economic growth. Economics, (1 (2)), 6-9.

42. Курпаяниди, К. (2021). Актуальные вопросы цифровизации в индустриальном секторе экономики Узбекистана. Общество и инновации, 2(4/S), 201-212.

43. Kurpayanidi, K. (2021). Modern Concepts and Models of Entrepreneurship Development. Bulletin of Science and Practice, 7(9), 425-444.

44. Курпаяниди, К. И. (2010). Современные тенденции развития предпринимательства в сфере промышленного производства: региональный аспект.

45. Курпаяниди, К. И. (2013). Экономические институты в условиях институциональных преобразований. Новый университет. Серия «Экономика и право», (5 (27)), 4-9.

46. Kurpayanidi, K. I., & Abdullaev, A. M. (2018). Actual issues of the functioning of an innovative industrial enterprise. ISJ Theoretical & Applied Science, 11(67), 74.

47. Kurpayanidi, K. I. (2020). Some issues of macroeconomic analysis and forecasting of the economy of Uzbekistan. Iqtisodiyot va innovatsion texnologiyalar. Ilmiy elektron jurnali, 2, 100-108.

48. Kurpayanidi, K. I. (2021). Analysis of scientific and theoretical ideas about entrepreneurship. Nazariy va amaliy tadqiqotlar xalqaro jurnali, 1(1), 50-59.

49. Toma, S. G., Grigore, A. M., & Marinescu, P. (2014). Economic development and entrepreneurship. Procedia economics and finance, 8, 436-443.

50. Курпаяниди, К. И. (2012). Институциональные основы системы государственной поддержки малого предпринимательства: опыт США. Национальные интересы: приоритеты и безопасность, (41), 54-60.

51. Kurpayanidi, K. (2021). Scientific and Theoretical Issues of Entrepreneurship Development. Bulletin of Science and Practice, 7(6), 345-352.

52. Курпаяниди, К. И. (2011). Актуальные вопросы оценки инвестиционной привлекательности и факторы активизации инвестиционных потоков. Экономика, предпринимательство и право, (9), 11-18.

53. Abdullaev, A. M., Kurpayanidi, K. I., & Khudaykulov, A. S. (2021). Institutional transformation of the business sector. Monograph. Fergana AL-FERGANUS.

54. Курпаяниди, К. И., & Урмонов, А. А. (2018). К проблемам активизации внешнеэкономических связей на основе инновационного развития. Экономика и бизнес: теория и практика, (10-1), 144-147.

55. Kurpayanidi, K. I., & Ashurov, M. S. (2020). COVID-19 pandemic sharoitida tadbirkorlik va uni rivozhlantirish masalalari: nazaria va amaliyot. Monograph.

56. Курпаяниди, К. И., & Муминова, Э. А. (2019). К проблеме активизации инновационных процессов в Узбекистане. Известия Ошского технологического университета, (3), 261-265.

57. Kurpayanidi, K. I., & Muminova, E. A. (2016). Modern approaches to defining the nature and function of national innovation system of the Uzbek economy. Theoretical & Applied Science, (1), 75-85.

58. Kurpayanidi, K. I. (2021). Sovremennye koncepcii i modeli razvitiya predprinimatel’stva. Byulleten’nauki i praktiki, 7(9).

59. Исманов, И. Н., & Курпаяниди, К. И. (2011). Оценка инвестиционной привлекательности и факторы активизации привлечения иностранного капитала. Вопросы структуризации экономики, (2), 28-30.

60. Курпаяниди, К. (2021). Actual issues of digitalization in the industrial sector of the economy of Uzbekistan. Общество и инновации, 2(4/S), 201-212.

61. Kurpayanidi, K. I. (2021). Sozdanie maly’kh predpriyatij: samorazvitie ili integraczionnoe razvitie, kakoj put’vy’birayut strany’mira. Problemy’sovremennoj e’konomiki.

62. Kurpayanidi, K. I., & Ashurov, M. S. (2020). COVID-19 pandemic sharoitida tadbirkorlik va uni rivozhlantirish masalalari: nazaria va amaliyot. Monograph. GlobeEdit Academic Publishing.

63. Курпаяниди, К. И., & Абдуллаев, А. М. (2020). Актуальные вопросы инновационной стратегии развития территорий Узбекистана. In Минтақа иқтисодиётини инвестициялашнинг молиявий-ҳуқуқий ва инновацион жиҳатлари (pp. 166-171).

64. Kurpayanidi, K. I. (2019). Actual issues of activation of foreign economic activity in the economy of Uzbekistan. ISJ Theoretical & Applied Science, 4(72), 60-65.

65. Курпаяниди, К. И., & Толибов, И. Ш. (2019). К вопросу оценки состояния и эффективности инфраструктуры предпринимательства в регионах Узбекистана. Экономика и бизнес: теория и практика, (1), 138-141.

66. Kurpayanidi, K. I. (2018). World bank DB2018 rating and its place in the development of the roadmap for entrepreneurship development in Uzbekistan. In International scientific review of the problems of economics and management (pp. 21-28).

67. Kurpayanidi, K. I. (2017). Doing Business 2017: Equal Opportunities for All» as a Driver of Entrepreneurial Environment Regulation. Economic Analysis: Theory and Practice, 16(3), 462.

68. Курпаяниди, К. И. (2015). Предпринимательство в современной институциональной среде.

69. Курпаяниди, К. И. (2021). Научно-теоретические вопросы развития предпринимательства. Бюллетень науки и практики, 7(6), 345-352.

70. Kurpayanidi, K. I., & Tolibov, I. S. (2017). Modern state and the priority directions of further development of economy of Uzbekistan in the conditions of globalization. ISJ Theoretical & Applied Science, 10(54), 176-185.

71. Курпаяниди, К. И. (2014). Государственный регламент инновационного процесса: зарубежный опыт и практика Узбекистана. Экономический анализ: теория и практика, (9 (360)), 60-64.

72. Курпаяниди, К. И. (2022). К вопросам методологических подходов исследования институциональной среды малого предпринимательства. Бюллетень науки и практики, 8(9), 442-460.

73. Курпаяниди, К. И. (2022). Вопросы разработки стратегии инвестиционной политики в условиях институциональной трансформации. Nazariy va amaliy tadqiqotlar xalqaro jurnali, 2(3), 7-23.

74. Kurpayanidi, K., Nabiyeva, N., Akhunova, S., & Tukhtasinova, M. (2021). Analysis of the State's Macroeconomic Policy. Revista Geintec-Gestao Inovacao E Tecnologias, 11(4), 4669-4680.

75. Kurpayanidi, K. (2021). National innovation system as a key factor in the sustainable development of the economy of Uzbekistan. In E3S Web of Conferences (Vol. 258, p. 05026). EDP Sciences.