

Hypothetically, it is possible for machines to learn to solve any problem on earth relating to the physical interaction of all things within a defined or contained environment by using artificial intelligence and machine learning.

The rise of digital agriculture and its related technologies has opened a wealth of new data opportunities. Remote sensors, satellites, and UAVs can gather information 24 hours per day over an entire field. These can monitor plant health, soil condition, temperature, humidity, etc. The amount of data these sensors can generate is overwhelming, and the significance of the numbers is hidden in the avalanche of that data.

The idea is to allow farmers to gain a better understanding of the situation on the ground through advanced technology (such as remote sensing) that can tell them more about their situation than they can see with the naked eye. And not just more accurately but also more quickly than seeing it walking or driving through the fields.

References

1. Artificial Intelligence [Electronic resource]. – Mode of access: <https://www.digitaltrends.com/.../Artificial-Intelligence...> – Date of access: 18.03.2019.
2. New developments in agriculture [Electronic resource]. – Mode of access: <https://www.robotrends.com/New-developments-in-agriculture>. – Date of access: 20.03.2019.
3. Artificial Intelligence in farming [Electronic resource]. – Mode of access: <https://www.searchenterpriseai.techtarget.com/> – Artificial Intelligence in farming. – Date of access: 25.03.2019.

UDC 631.3

MAINTENANCE OF FARM MACHINERY

*Student – Tumarov N.O., 38 tc, 1 year, TSF
Scientific
supervisor – Savelyeva E.N., senior teacher
EI «Belarusian State Agrarian Technical University»,
Minsk, the Republic of Belarus*

Abstract. The article is headlined maintenance of farm machinery. It deals with farm machinery costs. The main factors from which farm machinery must be protected and objectives of good maintenance practice are defined. A lot of attention is paid to various types of farm machinery maintenance.

Keywords: maintenance, farm machinery, agriculture, farm machinery costs.

Today farm machinery is considered to be one of the most important power sources in agriculture. Effect of machinery power on agriculture is considerable. The use of modern technology during last decades has resulted in rapid growth of farm production. Farm machinery is important example of this mod-

ern technology. In the meantime, costs of owning and operating of farm machinery are calculated to be rather high. Farm machinery costs consist of several sub-cost items such as depreciation, insurance, housing, fuel costs, repair and maintenance costs. One of the main conditions for improving the efficiency of farm machinery usage in agricultural organization is to improve the maintenance and repair of machines. Maintenance can be defined as the practice of keeping in form the shape of equipment's, machine systems or objects in original status as much as possible. It should be taken into account that maintenance is not repairing an agricultural machine after it breaks or when it stops work. It is a means of achieving optimum value for equipment in order to perform its desired and designed functions. Maintenance is protection of any farm machine so that it does not break down or wear out quickly [1, p.58].

Farm machinery must be protected from the following factors:

- a) Wear (grease and oil are used to protect machines from wears),
- b) Dirt (filters are used to catch and hold dirt before it gets inside and damages parts),
- c) Heat (the cooling and lubrication systems protects the machine from heat).

Regular maintenance is the one of the prerequisites for a long living and reliable engine performance.

Good maintenance practices are essential for efficient operation of all types of farm machinery. Efforts spent in support of farm machinery, its maintenance storage will definitely pay off in the future. Maintenance of farm machinery is complicated by the usage of pattern of short but intense activity, followed by periods of non-usage or storage.

There are the following objectives of good maintenance practice:

- to do maintenance only when necessary,
- to reduce maintenance cost and cost due to production lost,
- to increase equipment life,
- to reduce number of failure and shutdowns,
- to intervene before failure occurs,
- to reduce inventory costs / effective inventory control.

There are some types of machinery maintenance: preventive maintenance, proactive maintenance and discard type.

Preventive maintenance is one of the oldest method of maintenance. It is used mostly along with corrective maintenance and condition-based maintenance. Preventive maintenance is a planned maintenance of plants resulting from periodic inspection in order to minimize the breakdowns and depreciation rates. This includes the followings: servicing, adjusting, operating, repairing and caring for agricultural machines so as to prevent unnecessary wear out of parts, and keep time loss due to breakdown to minimum.

Proactive maintenance is a preventive maintenance strategy that works to correct the root causes of failure and avoid breakdowns caused by underlying

equipment conditions. The purpose of proactive maintenance is to see machine failures as something that can be anticipated and eliminated before they develop.

Discard type is the removal and disposal of items or parts. A defect is typically a potential failure or other condition that will require maintenance attention at some time in the future, but which is not currently preventing the equipment from fulfilling its functions [2, p. 107].

To make a conclusion, the main condition for the stable and productive work of farm machinery is regular maintenance, compliance with work time and machine downtime, use only high-quality fuel and lubricants.

References

1. Khodabakhshian, R.M. Prediction of repair and maintenance costs of farm tractors by using of preventive maintenance / R.M. Khodabakhshian. – Nigeria; University of Mashhad, 2014. – 58 p.

2. Segun, R. N. Guide to agricultural machinery maintenance and operations / R.N. Segun. – Nigeria; Federal College of Agriculture, 2015. – 107 p.

УДК 631.3 (94)

ЭКОНОМИЧЕСКАЯ ЭФФЕКТИВНОСТЬ СЕЛЬСКОХОЗЯЙСТВЕННОЙ ТЕХНИКИ НА ПРИМЕРЕ ОПЫТА АВСТРАЛИИ

*Студенты – Филиппович П.Р., 20 мо, 4 курс, ФТС;
Баранова М.А., 16 им, 1 курс, ФПУ*

*Научный
руководитель – Рыло Т.В., ст. преподаватель
УО «Белорусский государственный аграрный технический
университет», г. Минск, Республика Беларусь*

Аннотация. Статья рассматривает наиболее приемлемые варианты для австралийских фермеров обновления машинного оборудования: закупка нового оборудования, аренда сельскохозяйственной техники, подрядные услуги. Коллективное использование сельскохозяйственного оборудования является привлекательной формой владения, и все чаще используется в фермерских хозяйствах Австралии.

Ключевые слова: рынок продаж, сельскохозяйственное оборудование, коллективное владение, подрядные услуги, дилер, подрядчик.

В настоящее время постоянно растущие технологии развития техники требуют, чтобы производители сельскохозяйственной продукции следили за изменениями, повышающими производительность, имея при этом другое видение на затраты при покупке сельскохозяйственной техники.