

improving the quality of work and the efficiency of the entire production can be achieved by the introduction of the latest technologies using modern high-performance equipment, complex mechanization and automation of maintenance and repair of machines.

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PREVENTIVE FARM MACHINERY MAINTENANCE ACTIVITIES

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Abstract. The article is devoted to the preventive farm machinery maintenance activities. Types of preventive maintenance are described in the article.

Keywords: farm machinery, maintenance, preventive maintenance, a time-based approach, a usage-based approach, a condition based maintenance.

Farm machinery maintenance is a vital aspect of agricultural operation and production, which has been neglected or handled without caution. Agricultural machines operate in a most unpleasant environment and must be adequately maintained in order to perform its desired functions effectively. The service life and reliability of any machine in performing its desired function depends so much on how much maintenance practices were observed in operating such machine.

Farm machinery maintenance involves regular servicing of equipment, routine checks, repair work, and replacement of worn or non-functional parts. Machines to be maintained include both heavy-duty equipment and simple hand-operated machines.

Preventive farm machinery maintenance is performed in order to prevent equipment breakdown. It is a planned maintenance of plants resulting from periodic inspection in order to prevent unnecessary wear out of parts and keep time

loss due to breakdown. In practice preventive maintenance means regularly checking equipment for small problems and fixing them before failure can occur.

Preventive maintenance activities may consist of inspections of agricultural machines, calibrations, lubrications, adjustments, cleaning, or part replacements. As preventive maintenance activities are performed, workers also document the equipment condition so they know when future maintenance may be needed.

Preventive maintenance can follow a time-based approach, a usage-based approach, or a combination of the two and a condition based maintenance. A variation of these types of preventive maintenance should ideally be scheduled and performed on all items of equipment to prevent unplanned failure.

A time-based preventive maintenance goes by a variety of names, a main one being "calendar-based" maintenance. This approach involves setting up a preventive maintenance schedule to perform regular inspections on pieces of farm equipment, especially those that would have a severe impact on agricultural production in the event of a breakdown. A time-based approach schedules a preventive maintenance task using a set time interval, such as every 10 days. Other examples include triggering preventive maintenance (like a regular inspection of critical) on the first day of every month or once in a three-month period.

A usage-based maintenance, also called "runtime maintenance," is an approach that triggers maintenance after a certain amount of asset runtime (such as every "X" amount of kilometers, miles, hours or production cycles).

A usage-based preventive maintenance makes sure that equipment continues to operate as the manufacturer intended. Unlike time-based maintenance, which occurs on a more rigid schedule, usage-based maintenance occurs as often as an asset needs it, whether it's every month or every six months. This can include after a certain number of kilometres, hours, or production cycles. An example of this trigger is routine maintenance being scheduled on a motor vehicle every 10,000km.

A condition based maintenance is a form of proactive maintenance. It's a maintenance strategy that monitors the actual condition of an asset to determine what a maintenance task needs to be done. Condition based maintenance dictates that maintenance should only be performed when certain indicators show signs of decreasing performance or upcoming failure. For example, preventive maintenance will be scheduled when vibration on a certain component reaches a certain threshold, indicating that it should be replaced or lubricated.

Preventive maintenance offers a number of important benefits:

- prolonged life of farm machinery and equipment;
- less unplanned downtime caused by equipment failure;
- less unnecessary maintenance and inspections;
- fewer errors in day-to-day operations;
- improved reliability of farm machinery and equipment;
- fewer expensive repairs caused by unexpected equipment failure that must be fixed quickly;
- reduced risk of injury.

With proper maintenance, farm machinery will stay in great shape for a long time to come and farm machinery will be much more reliable. With sound planning and safety practices, farmers can carry out maintenance tasks on their equipment and buildings with minimal risk to their safety.

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MIT AUTOMATISIERUNG MEHR TIER

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Annotation. Die Automatisierung und Technisierung der Tierhaltung spielen dabei auch ihre Rolle. Die mangelnde gesellschaftliche Akzeptanz der Halteverfahren hängt maßgeblich mit der Bewertung des Tierwohls zusammen, dass von der Öffentlichkeit als verbesserungswürdig eingestuft wird.

Schlüsselwörter: die Landwirtschaft, Tierwohl, die Nutztierhaltung, der Landwirt, die Nutzung.

Unter dem Begriff „Tierwohl“ verstehen viele, die Lebensqualität und das Wohlergehen von Nutztieren zu verbessern. Das Thema beschäftigt heutzutage immer mehr Verbraucher, die sich verstärkten Tierschutz wünschen. Wie das Bundesministerium für Ernährung und Landwirtschaft der BRD betont, unterstützt sie ausgewählte Betriebe, die neue wissenschaftliche Erkenntnisse zur Nutztierhaltung in der Praxis ausprobieren. Ziel ist es, die Haltung von landwirtschaftlichen Nutztieren zu verbessern [1]. In den vergangenen Jahren steht die moderne Nutztierhaltung unter dem öffentlichen Interesse und wird von verschiedenen gesellschaftlichen Gruppen kritisiert.

Die intensive Nutztierhaltung, wie sie heute in Deutschland weit verbreitet ist, wird zunehmend kritisch gesehen. Die Kritik kommt dabei schon länger nicht mehr allein von Umwelt- und Tierschutzverbänden. Das Wohl und der