sounds whenever the shaft is rotated, then they may have already been seized and need lubricating them with oil. Ball bearings that have already worn, on the other hand, may possess a distinctive dry rolling sound when the shaft is moved. They can also manifest raspy feel and resistance when rotating the shaft. In this case, lubrication cannot fix them since the problem is already permanent. The only solution to these faulty bearings is to replace them fully.

Conclusion

Generally speaking, to ensure better maintenance of electric motors, all maintenance procedures and tests should be conducted systematically (at least every 6 months) in order to pinpoint potential problems and correct them before they result in undesired downtime. Proper preventive maintenance of motor reduces unplanned downtime, increases the life of electric motors, improves the motor efficiency and reduces energy consumption.

A checklist that focuses on examining and monitoring the motor and electrical wiring allows detecting and identifying potential problems that the motor may face and addressing these problems ahead of time. This will drastically bring down unexpected repair expenses.

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DIGITAL TECHNOLOGIES IN AGRICULTURE

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Abstract. The article describes digital technologies in agriculture.

Keywords: digital technologies, agriculture, drone monitors, precision pruning.

In the not-too-distant future, our fields could be tilled, sown, tended and harvested entirely by fleets of co-operating autonomous machines by land and

air. And they'll be working both day and night. Driverless tractors that can follow reprogrammed routes are already being deployed at large farms around the world. Drones are buzzing over fields assessing crop health and soil conditions. Ground sensors are monitoring the amount of water and nutrients in the soil, triggering irrigation and fertilizer applications. The future of farming is automated.

Precision pruning.

It's hard to imagine the most traditional of agricultural sectors – wine making – as needing more than natural sunshine and soil. But even here automation is encroaching [1].

Wine makers have used drones to inspect their vineyards for several years, with high-definition cameras and sensors assessing crop and soil health.

But in France's Burgundy region, a shortage of farm labor has led inventor Christophe Millot to develop a vine-pruning robot called Wall-Ye.

The latest generation of this trundling four-wheeled robot can make a cut every five seconds. It has six cameras – some with infrared sensors – and two arms, and is controlled by a tablet computer inside.

The machine learns as it goes and can trim the grass around each vine. An onboard solar-powered battery gives 10-12 hours of charge, so with a change of battery, it can work day and night.

Robo lettuce.

Japanese firm Spread's automated vegetable factory in Kyoto could produce 30,000 lettuces a day. It stretches up, instead of across undulating fields. Everything after seeding will be done by machines – watering, trimming, harvesting [1].

LED lighting developed specifically for plant cultivation reduces energy costs by 30 %. And growing vegetables in vertical farms means you can recycle 98 % of the water and produce food much closer to where people consume it, cutting down on transport costs and emissions.

Drone monitors

Back outside, drones are monitoring crop growth rates, spotting disease, and even spraying crops with pesticides and herbicides. Now researchers are also trying to make them co-operate and work in swarms. If they are mapping weeds in a field, the drones will recruit each other to converge on those areas where the weed presence is higher.

Although GPS signals are generally strong in agricultural areas, one challenge for drones and other farmland robots is coping with patchy internet and mobile connectivity [2].

Of course, automation might promise more efficient food production, but it also threatens agricultural jobs.

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