

THE ROLE OF QUALITY CONTROL IN PLOWING FOR IMPROVED AGRICULTURAL OUTCOMES

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Контроль якості під час оранки впливає на здоров'я ґрунту та врожайність. Важливі час, глибина оранки та методи. Технології, як GPS, покращують цей процес, забезпечуючи сталий розвиток аграрного сектору.

Quality control during plowing is a critical aspect of modern agriculture that impacts soil health, crop yield, and environmental sustainability. Plowing, a primary tillage operation, prepares the land for planting by turning over, breaking up, and aerating the soil. However, the effectiveness of plowing and its impact on crop quality and yield depend on several factors, including timing, depth, and method.

Firstly, the timing of plowing is crucial. It should be conducted when the soil moisture is at an appropriate level. Too wet, and the soil can become compacted; too dry, and it can be hard to turn over. Quality control at this stage involves testing soil moisture and adjusting the timing of plowing operations accordingly.

Secondly, the depth of plowing significantly affects soil health and crop growth. Deep plowing can help in breaking up compacted soil layers, improving water infiltration and root penetration. However, it can also bring dormant weed seeds to the surface and disturb soil microorganisms. Monitoring and controlling the plow depth ensure that it meets the specific needs of the crop being planted and the soil conditions of the field.

Moreover, the method of plowing, whether traditional moldboard plowing, chisel plowing, or no-till farming, has a direct impact on soil erosion, moisture retention, and the physical condition of the soil. Quality control in selecting the plowing method is vital to match the agricultural practices with environmental sustainability goals and crop quality standards. For instance, conservation tillage methods, including reduced-till or no-till, have been shown to improve soil structure, reduce erosion, and increase water retention, leading to better crop quality and yield.

In conclusion, quality control during plowing is essential for optimizing soil health, ensuring sustainable use of land resources, and achieving high crop quality and yield. By carefully considering the timing, depth, and method of plowing, and incorporating technology into farming practices, farmers can significantly improve the effectiveness of their plowing operations. As agriculture continues to evolve, the focus on quality control in every aspect of farming, including plowing, will be crucial for meeting the increasing global demand for food in a sustainable manner.

References:

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