

K d: Precision Nutrition; Fertilizer Application; Agricultural technology; Sensor technologies; Satellite imaging

I dc

In the ever-evolving world of agriculture, precision plays a pivotal role in optimizing crop yield and sustainability. One area that has witnessed signicant advancements is precision nutrition, a technique that involves the precise application of fertilizers based on the specic needs of crops. is article explores the innovations and bene ts associated with targeted fertilizer application, shedding light on how precision nutrition is revolutionizing modern agriculture [1].

Ud ad c

Precision nutrition in agriculture goes beyond the traditional one-size- ts-all approach to fertilization. It leverages technology, data analytics, and a deep understanding of plant biology to tailor fertilizer application to the unique requirements of each crop and even specic regions within a eld. By considering factors such as soil composition, plant health, and environmental conditions, farmers can optimize nutrient delivery and minimize waste.

Kadac a d a ca

S c: Modern agriculture utilizes advanced sensors to gather real-time data on soil conditions and plant health. ese sensors can measure nutrient levels, moisture content, and other

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empowering 16(vs 0.1(m tb6 p)12(136)54c)7()4.9(b.9(8(4.1)7) S\$49()\$45noe cro fertilizer applications [9].

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Precision nutrition addresses the inherent variability in soil composition and plant health by leveraging advanced technologies to precisely deliver nutrients where they are needed. e use of sensors allows farmers to gather real-time data on soil conditions, enabling informed decisions on fertilizer composition and dosage. By tailoring nutrient delivery to the speci c requirements of each crop, farmers can optimize growth conditions and enhance overall productivity.

T c

e integration of sensor technologies, satellite imaging, and automated machinery has been instrumental in the progress of precision nutrition. Sensors provide granular insights into soil health, enabling farmers to make on-the-spot adjustments to fertilizer applications. Satellite imaging o ers a macroscopic view of entire elds, facilitating the identi cation of spatial variations in soil fertility. Automated machinery equipped with precision application systems ensures accurate and e cient nutrient distribution, reduci-86 nows tievan-tanual landuction.

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Precision-nutrition represents a sioni cant leap forward in the quest for sustainable and e cient ariculture. e integration of 166e)566hn467log)23.96 a9h4d d)3419f)64-dr)61768.161 a19611612f136)56 reduced environmental impact. As adv-88.9h4(em4.1(n)19(s co)12h19()5(n)19(

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Ca d ad ba

While precision nutrition holds immense potential, challenes reSain. Initial costsssociated with acquiring and implementing adv-80.1(a)d technologies can be a barrier for somrmers, especially 16(vs)05ose in resource-constrained settindditionally, 16(vs)05eed for 6. https://www.worldcat.org/title/rank-correlation-methods/oclc/3827024 166()5(bhnic)2.94)5(exp)9(r)10()4.93()86 a)h/(d)34)19()64 in)9(b(r)10p)2.1(1.36()64)19()5(0)19

e integration of big data analytics allows5farmers to make sense of the vast amount of information collected from senors and other sources.

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