

Controlled Environment Agriculture Market In 2029

The Business Research Company's Controlled Environment Agriculture Market Report 2026 – Market Size, Trends, And Global Forecast 2026-2035

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/EINPresswire.com/ -- "[Controlled Environment Agriculture Market](#) to

Surpass \$116 billion in 2029. Within the broader Agriculture industry, which is expected to be \$16,763 billion by 2029, the Controlled Environment Agriculture market is estimated to account for nearly 1% of the total market value.

Which Will Be the Biggest Region in the Controlled Environment Agriculture Market in 2029

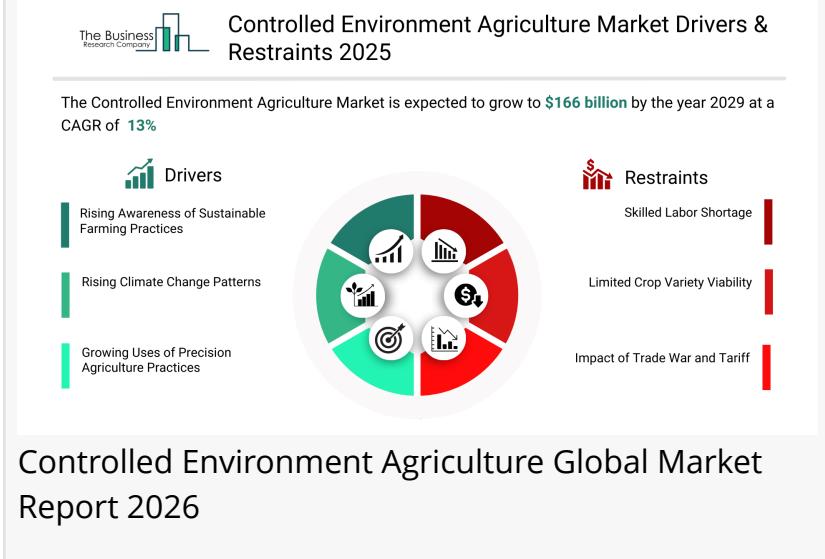
Asia Pacific will be the largest region in the controlled environment agriculture market in 2029, valued at \$70,649 million. The market is expected to grow from \$40,852 million in 2024 at a compound annual growth rate (CAGR) of 12%. The rapid growth can be attributed to the rising climate change patterns and growing uses of precision agriculture practices.

Which Will Be The Largest Country In The [Global Controlled Environment Agriculture Market](#) In 2029?

China will be the largest country in the controlled environment agriculture market in 2029, valued at \$40,212 million. The market is expected to grow from \$23,720 million in 2024 at a compound annual growth rate (CAGR) of 11%. The rapid growth can be attributed to the rising



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climate change patterns, rising awareness of sustainable farming practices and growing uses of precision agriculture practices.

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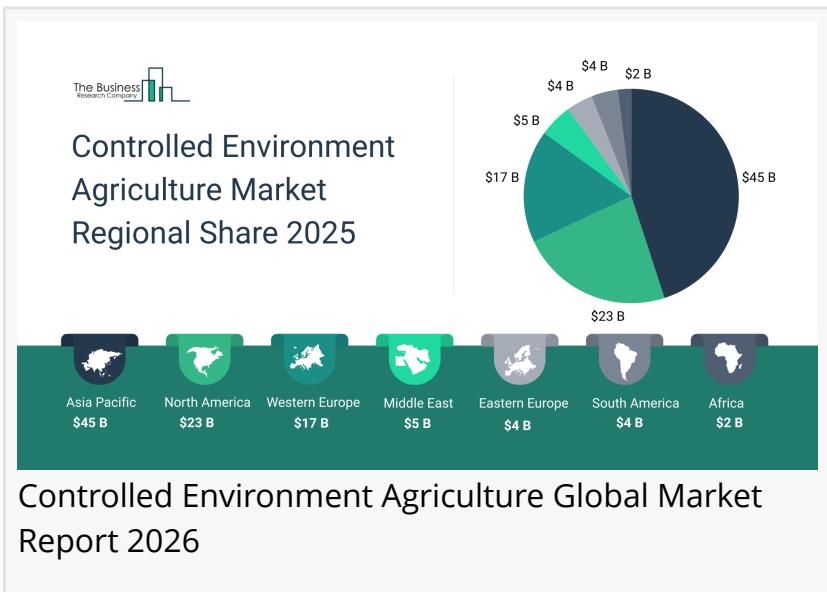
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What will be Largest Segment in the Controlled Environment Agriculture Market in 2029?

The controlled environment agriculture market is segmented by component into hardware and software and services. The hardware market will be the largest segment of the controlled environment agriculture market segmented by component, accounting for 90% or \$103,926 million of the total in 2029. The hardware market will be supported by innovations in climate control systems, advanced irrigation and nutrient delivery units, energy-efficient LED lighting and CO₂ supplementation equipment, high-precision sensors and automation devices, modular and scalable greenhouse and vertical farming infrastructure, improvements in durability and operational efficiency, and growing focus on reducing resource consumption while maintaining consistent crop quality.

The controlled environment agriculture market is segmented by growing method into hydroponics, aeroponics, aquaponics and other growing methods. The hydroponics market will be the largest segment of the controlled environment agriculture market segmented by growing method, accounting for 63% or \$73,557 million of the total in 2029. The hydroponics market will be supported by efficient water usage with recirculation systems, higher crop yields in limited spaces, ability to grow crops year-round, precise control of nutrients and pH levels, reduced dependency on soil quality, integration with vertical and urban farming models, and growing awareness of sustainable food production methods.

The controlled environment agriculture market is segmented by crop types into tomato, leafy greens, strawberries, cucumber, pepper, cannabis and other crop types. The tomato market will be the largest segment of the controlled environment agriculture market segmented by crop types, accounting for 51% or \$58,876 million of the total in 2029. The tomato market will be supported by high market demand, ability to grow year-round in controlled environments, improvements in yield and quality, resistance to pests and diseases, adaptability to hydroponic and vertical farming, advancements in nutrient management, and increasing consumption of fresh produce.



What is the expected CAGR for the Controlled Environment Agriculture Market leading up to 2029?

The expected CAGR for the controlled environment agriculture market leading up to 2029 is 13%.

What Will Be The Growth Driving Factors In The Global Controlled Environment Agriculture Market In The Forecast Period?

The rapid growth of the global controlled environment agriculture market leading up to 2029 will be driven by the following key factors that are expected to reshape agricultural production, food supply chains, and sustainability practices worldwide.

Rising Awareness Of Sustainable Farming Practices- The rising awareness of sustainable farming practices will become a key driver of growth in the controlled environment agriculture market by 2029. As global food demand increases and pressure mounts to reduce land and water consumption, CEA offers a highly efficient alternative to conventional farming. By enabling year-round cultivation with closed-loop systems and precise resource management, CEA significantly lowers water, energy, and fertilizer use. Both consumers and corporations are placing greater value on eco-friendly food production methods that minimize waste and environmental impact. In addition, governments and sustainability-oriented organizations are actively supporting the development of resilient food systems by promoting technologies that boost productivity while conserving resources. This growing emphasis on sustainability is directly fueling investment in greenhouse systems, hydroponics, and vertical farming — the core technologies driving the CEA industry forward. As a result, the rising awareness of sustainable farming practices is anticipated to contributing to a 1.3% annual growth in the market.

Rising Climate Change Patterns - The rising climate change patterns will emerge as a major factor driving the expansion of the controlled environment agriculture market by 2029. Increasing climate unpredictability including extreme heat, droughts, floods, and irregular rainfall is pushing growers to adopt more resilient and dependable farming systems such as CEA. Traditional open-field agriculture is becoming increasingly vulnerable to these environmental fluctuations, resulting in unstable yields and disruptions to food supply chains. In contrast, CEA enables crop production within controlled environments, independent of external weather conditions, ensuring consistent harvests and reliable food output. As climate volatility intensifies, both public and private sectors are increasingly recognizing CEA as a vital adaptation strategy for enhancing food security and mitigating the risks associated with climate change. Consequently, the accelerating rising climate change patterns capabilities is projected to contributing to a 1.1% annual growth in the market.

Growing Uses Of Precision Agriculture Practices - The growing uses of precision agriculture practices processes will serve as a key growth catalyst for the controlled environment agriculture market by 2029. Precision agriculture leverages advanced technologies such as sensors, automation, data analytics, and IoT-enabled monitoring to optimize inputs like water, nutrients, lighting, and CO₂ levels. These technologies are integral to CEA systems, making their integration

a natural progression for producers aiming to enhance efficiency and maximize yields. As data-driven farming becomes the industry norm, CEA facilities are increasingly outfitted with intelligent control systems that continuously analyse real-time conditions and automatically adjust environmental parameters to promote optimal plant health and superior crop quality. Therefore, this growing use of precision agriculture practices operations is projected to support a 0.8% annual growth in the market.

Increasing Awareness To Reduce Greenhouse Gas Emissions - The increasing awareness to reduce greenhouse gas emissions will become a significant driver contributing to the growth of the controlled environment agriculture market by 2029. Increasing global concern over the agricultural sector's carbon footprint has highlighted the limitations of conventional farming, which contributes heavily to emissions through soil degradation, excessive fertilizer use, and transportation inefficiencies. In contrast, CEA provides a localized, resource-efficient, and energy-optimized approach to food production. These systems can incorporate renewable energy, recover waste heat, and significantly reduce transportation-related emissions by enabling urban or near-market cultivation. As sustainability reporting and carbon accounting gain importance across both corporate and governmental agendas, the lower-emission profile of CEA is drawing greater attention. Many organizations are investing in CEA as a practical strategy to advance carbon neutrality targets while ensuring stable food production. This growing awareness is accelerating adoption and funding for environmentally sustainable farming technologies. Consequently, the increasing awareness to reduce greenhouse gas emissions strategies is projected to contribute to a 0.6% annual growth in the market.

Access the detailed Controlled Environment Agriculture Market report here:

<https://www.thebusinessresearchcompany.com/report/controlled-environment-agriculture-global-market-report>

What Are The Key Growth Opportunities In The Controlled Environment Agriculture Market in 2029?

The most significant growth opportunities are anticipated in the controlled environment agriculture hardware market, the controlled environment agriculture hydroponics market, and the controlled environment agriculture for tomato market. Collectively, these segments are projected to contribute over \$103 billion in market value by 2029, driven by advancements in climate-adaptive farming technologies, the rising demand for pesticide-free produce, and the rapid expansion of high-yield indoor farming systems. This surge reflects the accelerating adoption of smart agricultural solutions that enable year-round production, optimized resource utilization, and enhanced crop consistency, fuelling transformative growth within the broader controlled environment agriculture industry.

The controlled environment agriculture hardware market is projected to grow by \$44,287 million, the controlled environment agriculture & hydroponics market by \$32,624 million, and the controlled environment agriculture for tomato market by \$26,010 million over the next five years from 2024 to 2029.

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