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(54) Title of the invention : METHOD FOR OPTIMIZING OFF-SEASON FLOWER PRODUCTION IN CHRYSANTHEMUM (DENDRANTHEMA X GRANDIFLORA TZVELEV) CULTIVARS UNDER LOW HILL CLIMATIC CONDITIONS

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(57) Abstract :

The present invention relates to a method for optimizing off-season flower production in Chrysanthemum (*Dendranthema x grandiflora* Tzvelev) cultivars under low hill climatic conditions. The method utilizes High-Density Polyethylene (HDPE) as a covering material, combined with photoperiod adjustments, temperature regulation, targeted nutrient management, and integrated pest and disease control to achieve superior flowering outcomes. HDPE enhances light diffusion, stabilizes temperature, and promotes earlier bud formation and flowering compared to traditional materials like tarpaulin and black satin cloth. The method also incorporates blackout curtains and LED lighting for precise photoperiod manipulation, along with biostimulants and micronutrient supplementation to improve flower size, weight, and yield. Trials demonstrate significant improvements, including reduced time to flowering (110.74 days), increased flower yield (44.71 flowers per plant), and extended post-harvest vase life (4-84 days). This invention

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(54) Title of the invention : Domestication of native ornamental plants for pot plant production through pinching, paclobutrazol and heading back methods.

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(57) Abstract :

ABSTRACT [505] The advanced horticultural domestication system introduces an innovative multi-technique cultivation framework for comprehensive native ornamental plant transformation that integrates pinching protocols, paclobutrazol application mechanisms, and heading back procedures, facilitating optimal plant morphology modification, enhanced growth regulation, and robust pot plant production while maintaining superior ornamental characteristics and commercial viability for consistent horticultural applications. [510] The comprehensive botanical framework employs adaptive cultivation algorithms and systematic growth management protocols, utilizing integrated chemical growth regulation and mechanical manipulation systems to ensure optimal plant compactness, enhanced flowering response, and superior root development while maintaining continuous growth monitoring capabilities and ornamental quality preservation. [515] The integrated methodology combines multi-dimensional horticultural techniques with plant physiology-driven management systems, leveraging variable-precision growth regulators and multi-factor morphological indicators to optimize domestication procedures and cultivation workflows for maximum ornamental appeal and minimal production uncertainty during critical commercial applications. [520] The novel responsive cultivation architecture features engineered precision application components with specialized plant response monitoring protocols, enabling complex multi-stage growth modification while ensuring morphological consistency and performance optimization across various ornamental species without compromising plant health and commercial viability. [525] The innovative design incorporates strategic validation mechanisms for enhanced plant adaptation and horticultural security, utilizing optimized multi-treatment systems and adaptive cultivation technology to ensure legitimate plant transformation while maintaining functionality across diverse growing environments and production scenarios. [530] Implementation methodology emphasizes scalable horticultural integration and efficient treatment sequences, implementing interactive monitoring measures and plant response algorithms to achieve superior morphological determination, enhanced ornamental characteristics, and production failure prevention while ensuring technological simplicity during commercial cultivation. [535] The system demonstrates exceptional adaptability through comprehensive integration of plant modification protocols and intelligent cultivation technologies, validating its effectiveness across various native ornamental species configurations and growing scenarios while maintaining consistent production performance and operational efficiency under diverse environmental conditions. [540] The developed framework enables sustainable and reliable production of domesticated ornamental plants through streamlined, science-powered cultivation systems, providing significant advantages over traditional horticultural approaches through variable treatment mechanisms, adaptive modification protocols, and improved plant transformation while maintaining superior ornamental quality during critical commercial production procedures.

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