regulation of maple leaf color is expected in the future, cultivating more excellent varieties possessing both ornamental value and environmental adaptability.

With technological advancements and the increasing demands of urban greening, the application of maple trees in landscape design is becoming increasingly widespread, but it also faces challenges such as climate change and urban environmental stress. In the future, molecular breeding based on genetic information and gene editing technology are expected to cultivate more superior varieties with stable leaf color and strong adaptability. Simultaneously, combined with digital planning tools and intelligent maintenance systems, precise design and sustainable management of maple landscapes can be achieved, enabling them to play a greater role in beautifying cities, inheriting culture, and promoting tourism. Through interdisciplinary integration, organically combining genetics, ecology, landscape design, and smart city technologies, this traditional ornamental tree species will surely radiate new vitality and vigor in modern urban landscapes, bringing people richer and more colorful autumn visual feasts.

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Conflict of Interest Disclosure

The author affirms that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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