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Color changing flowers present biotechnology in a new, creative context

colorchangingflowers.com

Scientists at Revolution Bioengineering are developing flowers that change color, making beautiful biotechnology for the consumer. They are including the public from the beginning, crowdfunding their colorful research on Indiegogo. Project backers can own a color changing petunia of their own for $42, but those in search of a truly unique flower can contribute $350K for the chance to customize a unique, personalized petunia.

The conversation surrounding GMOs and bioengineering has become increasingly polarized over the years, but recently, consumer-oriented biotechnology has begun to have an impact on that discussion. The recent USDA approval of genetically engineered nonbrowning Arctic apples, developed by Okanagan Specialty Fruits, a small, grower-led company, has started a new wave of curiosity about the direct-to-consumer benefits of biotechnology, a trend Revolution Bio wants to encourage. Joel Brooks of Okanagan Specialty Fruits expressed his excitement about Revolution Bio's project, stating "Revolution Bioengineering's color changing flowers are a great example of how the precise science of biotechnology can be used for simple, but beautiful enhancements that consumers can enjoy for themselves. We're looking forward to planting some ourselves!"

With the help of synthetic biology, these color-changing flowers have been engineered to change color from light to dark over the course of the day. While genetically engineered plants are usually associated with agriculture, Revolution Bio founders Keira Havens and Nikolai Braun have taken that technology out of that limited context and developed it for consumers. Havens says of the color-changing flower, "This flower is purely aesthetic – it is not for human consumption, it does not contain pesticides, it does not contain herbicides." She also suggests that "biotechnology is a tool we can use as we choose. we're choosing a more beautiful future."

Braun outlined the flower concept: "To make the flowers that change color, we fix a broken pathway. The white flowers are missing an enzyme they need to produce color. We use a biological switching mechanism to turn on that enzyme, allowing the flower to bloom in full color. It's completely user driven too-- you can decide when you want the color switch to happen." Should Revolution reach their 75K funding goal, they have a lot of ideas about the garden they want to build. One stretch goal is a flower that changes color continuously throughout the day.

Revolution Bioengineering is collaborating with a consortium of artists and scientists led by Professor Helen Storey CBE London College of Fashion, University of the Arts London with textile artist Patricia Belford (Ulster University) to develop a Living Dress which features the color changing flowers. The Living Dress will illustrate how we can harness nature to re-connect us back to the impact humans have on our natural world and how the two seemingly unconnected worlds of fashion and science can enlighten and come together.

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