

GROWERTALKS

Acres & Acres

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Consider the Tulip

Chris Beytes



CHRIS BEYTES

Consider the tulip. Its bulb is a wonder of nature, storing everything needed to make a new plant, including a tiny flower, already formed for next season (forcers cut bulbs open and peer inside with a microscope to assure it's there before removing from cold storage).

Yet it's not finicky or complicated: drop it in a hole in the garden and it will deliver the goods next spring with no fuss. It's large and rugged enough for even a small child to do it—as perfect for a first gardening experience as a sunflower seed in a Dixie cup.

The tulip flower, too, is uncomplicated, with a universally recognized shape. Ask that same child to draw a tulip and she will do so quickly and accurately, most likely choosing the red crayon to do so, despite the rainbow of colors available (I've heard that there are more than 3,000 cultivars on the market).

I thought of these things as I spent two days on a deep dive into the world of tulips during Tulip Trade Event, a new (this was the third year) open house hosted by 11 tulip growers and exporters from the Netherlands, the home of the tulip, even if they brought them from the Ottoman Empire 500 years ago. (The name is said to come from the Persian word for “turban.”)

The tulip is one of our oldest commercial flowering crops. We all know about “tulip mania,” when, in the 1600s, wealthy Dutch tulip collectors drove up the prices of rare specimens to 3,000 or 4,000 guilders—ten times the annual wage of a skilled craftsman.

Ah, what a modern tulip grower wouldn't give for a little tulip mania today. I don't know what a bulb costs at wholesale, but the resulting flowers fetch as little as 10 euro cents each at auction. That's after years of bulb production and months of careful temperature manipulation to get that bulb to send forth its flower on the desired day. Which is why cut tulip growers have invested as much in technology as any other sector of floriculture, achieving amazing efficiencies through hydroponic culture, internal transport and high-tech testing systems. (Do you know any other crop that utilizes x-rays to grade flowers or check for presence of disease?) An efficient grower can produce 400 to 500 stems per square meter per week.

There's only one thing about tulips that's still positively Middle-Ages: breeding a new one takes 20 to 25 years from cross to commercial introduction. That means a variety being developed today won't be introduced until I'm in my 80s. I don't know if I want to wait that long.

Nor does anyone else, which is why the biggest push in the crop today is speeding up the process. We listened to a lecture titled “Tulip Breeding 2.0” by Anita de Haan of tulip breeder Hobaho. She described the current process: Year 1 you make the cross. Year 6 the seedlings finally flower, so you can make your first selections. You begin multiplying those selections and by Year 11 you can select the best. More multiplication, another four years passes and you make another evaluation. By year 20, you hopefully have 1,300 lbs. of bulbs to test commercially. Another five years and you finally have 20,000 lbs. of bulbs—enough for a commercial launch.

Tulip Breeding 2.0 would cut that in half. How? Primarily by “marker-assisted breeding” via sequencing of the tulip genome—which is taking place right now at Genetwister Technologies in the Netherlands. As described in my cover story in the March GrowerTalks about the impatiens genome sequence, the tulip genome sequence will allow breeders to more quickly identify seedlings that carry desired traits. Instead of waiting five years for a seedling to bloom, breeders would be able to test for seedlings that carry the desired genetic marker.

What will they breed for? Color and shape, yes (although it’s hard to imagine improving upon what’s already available). No, disease resistance is the holy grail—fusarium and viruses, mainly, which would greatly improve the long-term sustainability of tulips as a commercial crop. Because with some 2 billion tulip bulbs being exported by the Dutch every year, that’s a lot of eggs in one basket. And the last thing they need is a tulip mania-style crash of this important and iconic crop. **GT**