

Wisconsin Fast Plants: Sprouting Up All Over

If you ever visit the University of Wisconsin, do not overlook the Science House. It's a small building—the oldest wood-frame building on campus—built in 1868.

When you step inside Science House and talk with three people who work there, you will soon forget the other bigger and more modern buildings. You will learn a great deal. This is because Science House is where Wisconsin Fast Plants were born. Fast Plants have traveled from this house to research labs and classrooms all over the world. They've even traveled into space!

Why are the plants so special? Dr. Paul Williams, who developed them nearly 25 years ago, and program coordinators, Coe Williams

and Dan Lauffer, answer this question with enthusiasm.

From Seed to Seed in Just Six Weeks

The most important thing about Wisconsin Fast Plants is that they live up to their name. These small, yellow-flowered plants go through their life cycle in just over 6 weeks.

It wasn't always this way. Dr. Williams spent 15 years speeding up the plant's life cycle. He began with 2000 varieties of *Brassica* seeds gathered from around the world. He planted them in his lab, watered them, placed them under light, and watched them grow. From this first group, Dr. Williams selected seeds from the plants that had grown the fastest. He planted



COURTESY OF WISCONSIN FAST PLANTS

The Fast Plants team at the University of Wisconsin includes (left to right) Coe Williams, Paul Williams, and Dan Lauffer.

those seeds and let them grow. Then he cross-pollinated the new plants. He continued this process, known as “selective breeding,” for generation after generation. The plant’s life cycle gradually shortened. Eventually, the life cycle of the selectively bred Fast Plant was 10 times shorter than it had been before Dr. Williams started his work.

Dr. Williams also was able to breed other qualities into the plants that make them useful for research. For example, the plants produce an above-average number of fertile seeds, don’t need much space (in fact, they thrive in company), and grow best under constant light.

Smaller Can Be Better

Wisconsin Fast Plants were first distributed to classrooms in 1986, and they caught on quickly. Through the mail and a toll-free phone line, teachers and students began sharing their Fast Plants experiences with members of the Fast Plants team.

Teachers began reporting one problem: The plants grew fast, but they grew too large! The average height of a flowering plant was 20 centimeters. Teachers told Dr. Williams that the plants sometimes crept up into the light banks. Some were so tall that they flopped over.

Dr. Williams and the team decided to try to develop shorter plants with thicker stems. Again, the answer was selective breeding. Dr. Williams cross-pollinated Fast Plants that were shorter and had thicker stems than average. Several generations later, the average plant was only 15 centimeters high, and its life cycle was just as short as ever.

A Worldwide Network

Today, Fast Plants are distributed to scientists all over the world through a national network



Paul Williams developed shorter Fast Plants (on left) through selective breeding.

called the Crucifer Genetic Cooperative. “Crucifers” are a family of plants that include Fast Plants, as well as cabbage, cauliflower, and Brussels sprouts. Crucifers, Dr. Williams says, will have great economic importance in the future, as the world’s population increases and inexpensive, easy-to-grow sources of food are needed. The work being done with Fast Plants is laying a foundation for work with these related plants, which might be described as the Fast Plants’ “cousins.”

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