

DOES HYDRILLA GROW AN INCH PER DAY?

MEASURING SHORT-TERM CHANGES IN SHOOT LENGTH TO DESCRIBE INVASIVE POTENTIAL

It has been well documented that one common characteristic among many invasive plants is their ability to grow. Hydrilla (*Hydrilla verticillata*) in particular, is notorious for growing into dense mats in many freshwater systems within Florida and across the United States.

The statement, “hydrilla can grow an inch a day” (Langeland, 1996) is often repeated. In this study, U.S. Army Corps researchers, stationed at the UF/IFAS Center for Aquatic and Invasive Plants, tested this statement.

The researchers measured individual shoot lengths to capture the plant’s average growth rate in inches, over a 5 week period. They also compared these rates to that of a desired native, American pondweed (*Potamogeton nodosus*).

Turns out that on average, hydrilla grows more than an inch per day. The researchers found that the growth rate of one hydrilla plant increased exponentially.

In the first week, hydrilla increased by 2.9 in/day. By week 5, hydrilla was growing by 191.7 in/day.

Information Adapted From

Glomski, L.M. & Netherland, M.D. (2012). Does hydrilla grow an inch per day? Measuring short-term changes in shoot length to describe invasive potential. *Journal of Aquatic Plant Management*, 50, 54-57.



So how does a single plant grow an average of 2.9 inches/day during the first week, and then reach an average growth rate of 191 inches/day?

Well, the short answer is that every day of growth results in more plant material to grow the next day, and then the next, and so on.

Graph A (top) compares the average growth rate of hydrilla to that of pondweed. The graph illustrates the exponential growth of hydrilla vs. pondweed. In just five weeks, hydrilla grew 3200 inches compared to the 500 inches of growth with pondweed.

The hydrilla images above each data point in Graph A, illustrate the unique growth pattern of hydrilla over time. Starting as a single shoot, hydrilla grows taller, towards the sunlight at the surface of the water.

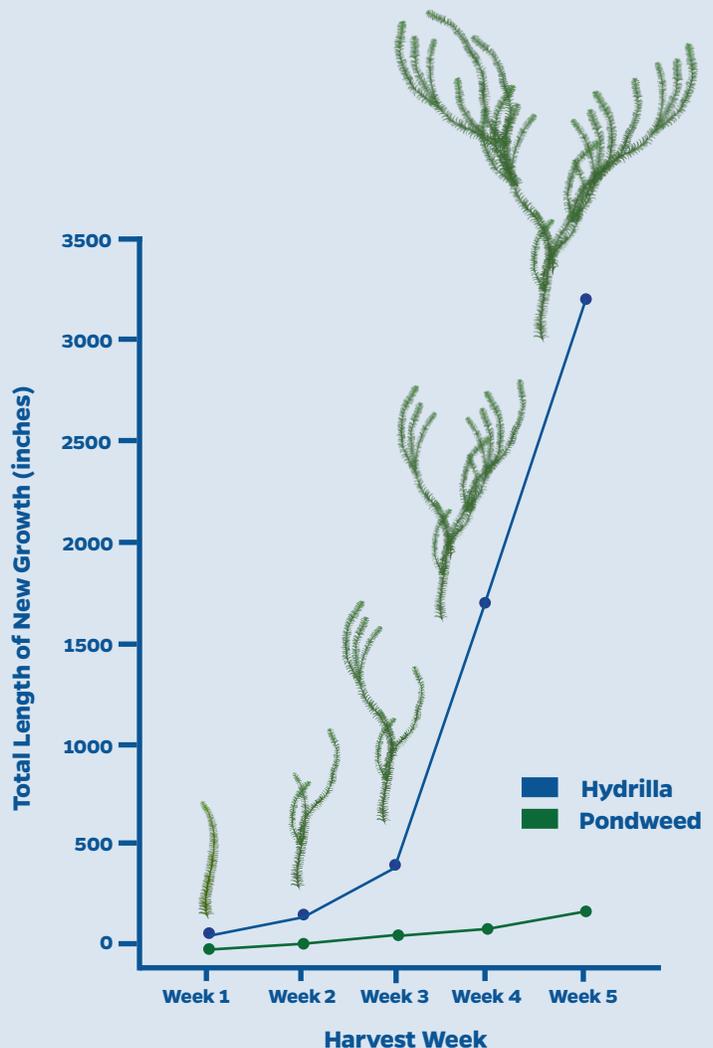
Then, as it reaches more sunlight nearing the surface, the plant begins to grow outward; producing more branches to capture more light and to grow faster while spreading across the water's surface.

Graph B (bottom) compares the number of branches produced by hydrilla versus pondweed over five weeks. Results showed that hydrilla produced about 157 branches, and pondweed grew one to two.

This unparalleled growth is why hydrilla is so prolific within natural systems. Management plans for this plant must be developed in order to have balanced and healthy native ecosystems that can thrive despite this plant's inevitable presence.

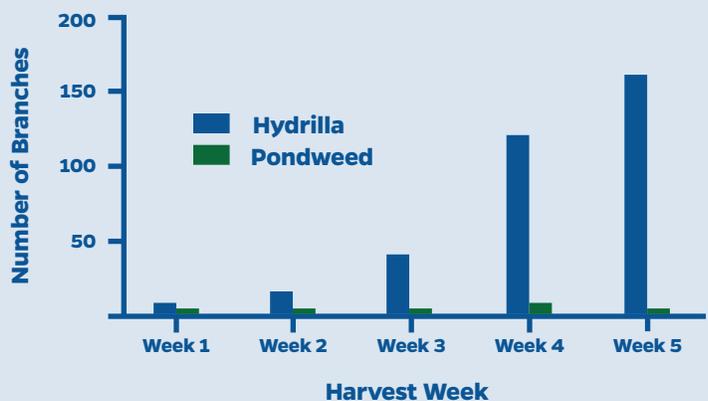
GRAPH A

Average Hydrilla Growth Rate Compared to a Common Native, American pondweed



GRAPH B

Number of Branches Produced by Hydrilla and American Pondweed



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