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Frail Triggerplant (*Stylidium debile*)

The frail triggerplant is part of the genus *Stylidium*, a group of plants found throughout the Pacific Basin, but most commonly found in Australia. All members of this genus are recognized by their distinctive flowers, which helps explain their common name. When pollinators land on the flower, a structure called a column snaps forward from its resting position and strikes the pollinator, leaving pollen in distinctive places on the animal's body. This happens extremely rapidly, making a triggerplant snap one of the fastest movements among the plants. *S. debile*'s flowers are about 5 millimeters across, so its main pollinators are small insects, but others may use bees, beetles, and even humans. After several firings, the flower's column transitions from anthers to stigma, and therefore can accept pollen deposited previously upon the insect by another flower.



Frail triggerplant flower and scape
Photo courtesy of Ryan Kitko
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Carnivorous habits

While the triggerplants were finally confirmed to be carnivorous or protocarnivorous (where the plant has trap capabilities but no enzymes necessary for digestion) in 2006, it should be noted that *S. debile* is not always a carnivorous plant. Although it is native to areas of coastal Queensland and New South Wales that are already home to many varieties of carnivore, the frail triggerplant has no adaptations for capturing or digesting prey through most of the year. It only becomes a carnivore when it blooms (in the Triffid Ranch greenhouse, in July and August), when it grows short, sticky hairs on the bases of its flowers. While the reason for this development is unclear, these hairs may have started as defenses to prevent insects from damaging blooms and buds and then later

adapted themselves to prey capture and processing. The rest of the year, though, the plant is as carnivorous as a tulip.

Care and Feeding

As mentioned previously, *S. debile* is generally found in typical carnivorous plant habitat, with highly sandy and peaty soil and very soft water. As such, the best soil mix is a 50/50 blend of milled sphagnum moss and sand. Make sure that the moss is actually sphagnum, not “green moss” or “horticulture moss” or any sphagnum moss with added fertilizers, and check the sand for alkalinity by dribbling a few drops of vinegar on the sand. If the sand hisses or sizzles, the sand is far too alkaline. The Texas Triffid Ranch uses silica sand specifically intended for swimming pool filters, and this may be a good option if other suitable sand is unavailable.

Water quality is a point of discussion among carnivorous plant enthusiasts, as overly hard water can injure or kill most carnivores. The Texas Triffid Ranch only uses rainwater or distilled water, as the municipal water in Dallas is fatal to most carnivores in a matter of hours, and continued use of such low-salt water is very highly recommended. Do not use water run through a water softener, as it still has enough table salt dissolved in it to injure or kill plants, and the same goes for bottled water unless it specifically reads “Distilled” on the label. Contrary to popular myth, while boiling tap water will kill bacteria and help remove chlorine, it will NOT remove salts, and may in fact concentrate them. Frail triggerplants like plenty of moisture, so water regularly but not so that the plant remains in standing water.

As with most carnivores, *S. debile* enjoys high levels of light, but grows and thrives under lower levels than such standard varieties as Venus flytraps or pitcher plants. In many circumstances where available sunlight is sporadic or unavailable, a standard 30-watt compact fluorescent light in a desk lamp will offer plenty of light for growth and maintenance. (If using fluorescent fixtures to light triggerplants, switch out the fixtures every six months to a year, depending upon the brand, to guarantee a high level of light reaching the plants.) Obviously, though, the more light, the faster the growth.

A note on temperature: research at the Texas Triffid Ranch noted that *S. debile* was much more tolerant of high temperatures than most other carnivores, so long as the plant was provided with enough moisture. Plants in our greenhouse thrived and bloomed in high temperatures exceeding 110 degrees Fahrenheit (43.33 degrees Celsius), which causes most plants to go dormant until cooler temperatures return. While leaving frail triggerplants in a terrarium or fishtank with a top and exposed to full sunlight may not kill them, the higher heat that the triggerplants enjoy may be debilitating or fatal for other plants in a tank or other enclosure. While the frail triggerplant is tolerant of cooler temperatures, it does not require a dormancy period as with other carnivores, and should be brought inside if outdoor temperatures go below 45 degrees F. (7.22 degrees C.).

On the subject of fertilizers, *S. debile* does very well without fertilizing, especially with types that could be fatal to other carnivores. In culture, this triggerplant is a perennial, and regular annual repottings seem to do more good than fertilizing, but if fertilizing is necessary, use orchid fertilizer diluted to one-fifth the recommended strength for orchids. Use a mister to apply the fertilizer, and always spray the plant, not its base or its roots.

Although *S. debile* readily flowers in captivity, it is not self-fertile, and almost all specimens in culture were propagated from one plant. While insects will attempt to pollinate them, the flowers will never produce viable seed. However, *S. debile* very enthusiastically reproduces from shoots emerging from the roots, and a sign of a happy plant is the sight of several seedlings emerging along the base of the mother plant. In some extreme cases, new plantlets will grow up through the soil against the walls of clear containers, such as bowls and tanks, and appear to be growing underground. These plantlets may be carefully removed and repotted in new containers: for best results, wait until the plantlet has at least one full set of leaves, and is approximately the same diameter as a nickel.

Resources

Triggerplants. Darnowski, David, Rosenberg Publishing, 2004. 96pp., ISBN 1877058033.

The Savage Garden: Cultivating Carnivorous Plants, D'Amato, Peter, Ten Speed Press, 1998. 314 pp., ISBN 0898159156.

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