

A Mixture in *Magnolia* × 'Daybreak'

August E. Kehr

A mixture has just been discovered in a few plants of *Magnolia* × 'Daybreak.' It is the purpose of this note to report this fact and explain how it came about. Mixtures of this nature are a serious problem, but they are even more so in plants such as magnolias, because it takes several years to find the error.

It came about as follows. About 1993 or 1994 I received about ten plants of *Magnolia* × 'Daybreak' from a tissue culture laboratory. It was a delight to have such plantlets.

They were potted to grow them to a larger size. After they had made some growth, most of the plants were given to friends but I planted three plants in my back yard.

As the three plants grew in the back yard, it was noticed they were not really typical in growth habit to 'Daybreak,' but that difference was attributed to the fact that they were grown from tissue culture material. Soft wood-cuttings were taken from time to time from those same plants because these cuttings rooted even more readily than those from the parent tree. Again this difference was attributed to the juvenility typical of plants from a tissue culture source.

This year, the three plants in the back yard set buds and I eagerly looked forward to seeing the flowers. An early frost killed most of the buds. This seemed very strange because this had never happened to the parent tree that was growing in a location not protected by the house and was in an even a colder location. Only a single bud actually opened, and it opened with a tiny purple flower. It was clearly not

true to type. I was quite alarmed, and for the first time began to realize that there could have been a mixture, and that the three plants were not true to the parent plant.

A friend visited recently, and I told him of the problem. He concurred (as did a nursery friend who was with him) that there clearly had been a mixture, because their plants (which were most likely also from the tissue culture source) were likewise not typical in any way of 'Daybreak.'

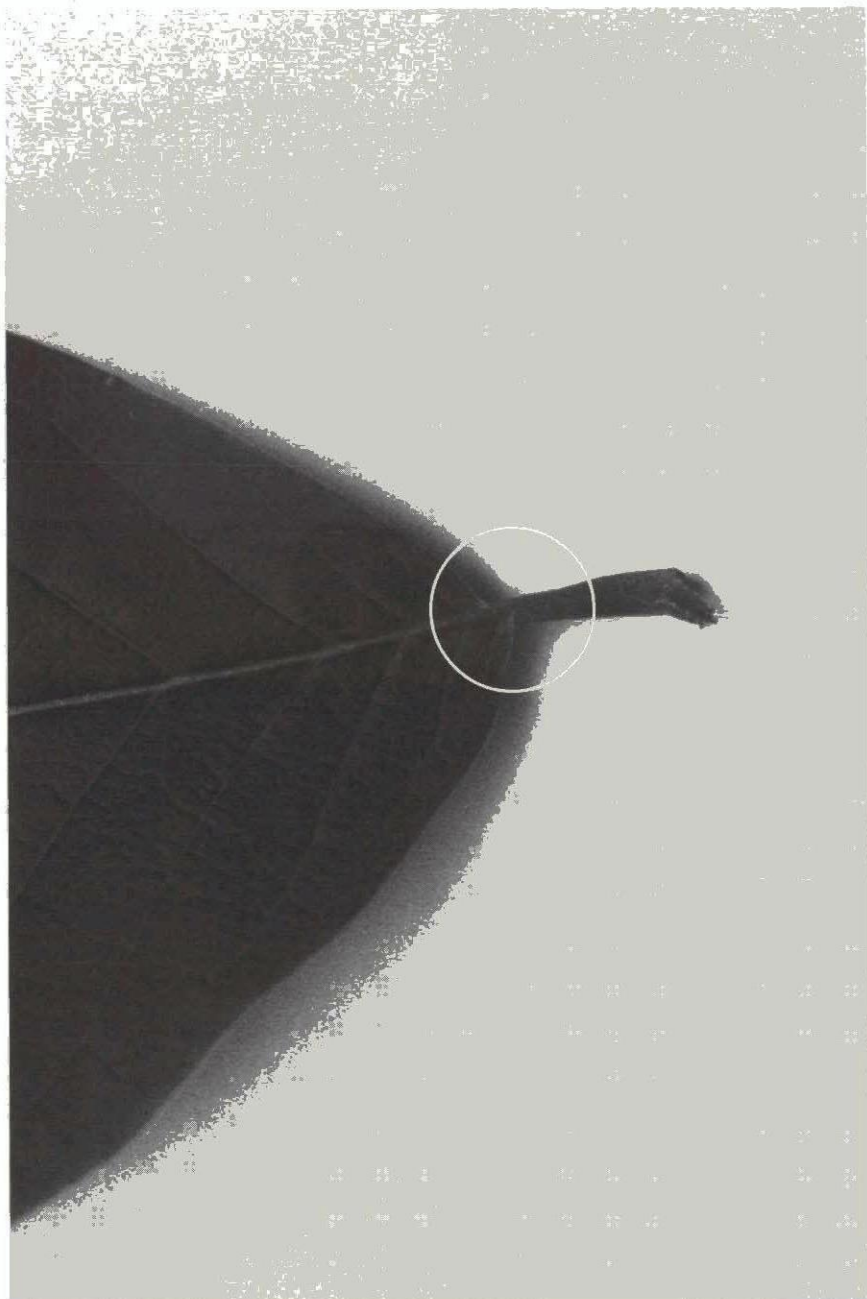
I had given rooted softwood cuttings from the above three plants to several other friends. Two of them have also reported a mixture. It is almost certain no propagating wood of 'Daybreak' was given to any commercial nurseryman from the false plants. However, I did not keep records of the persons receiving cuttings from these three incorrect plants, because I had no reason to believe that they were actually not true.

This notice is being disseminated to alert persons of the mixture problem that so unfortunately occurred in 'Daybreak' plants, and particularly those persons who got plants or propagating material directly from me.

How To Distinguish The Mixture

Fortunately, it is relatively easy to distinguish the true form of 'Daybreak' from the mixture or false 'Daybreak' as shown in the following photograph and table.

It is probable that the fifth item listed in the table is the most definitive characteristic for an exact identification of the true 'Daybreak,' especially for persons having only one or two plants for comparison.



As shown in this photo of a true 'Daybreak' leaf, the sides of the leaf are not attached equally. One side of the leaf is attached 1-3 mm lower than the other side. (Photo by A. E. Kehr.)

Characteristic	True Daybreak	False Daybreak
Upper surface of leaves	Shiny	Dull, not at all shiny
Lower surface of leaves	Gray-green in contrast to the top surface	Deep green, almost the same as the top
Tips of leaves	Only slightly pointed	Sharp, pointed tips
Veins on top of leaf	Markedly impressed	Just barely impressed
Stem end attachment	One side of leaf is attached 1-3 mm lower than the other side	Both sides of leaf are attached equally
Leaf angle at stem end	Very wide angle, never as sharp as tip end	Very sharp, as sharp as the tip end
Leaf edge	Wavy, impossible to lay flat enough to take photo	Leaf perfectly flat
Flower bud hardiness	Buds not killed at minus 15-25 °F	Buds killed at plus 5 °F

I deeply regret this problem and I will replace any plants that came from me insofar as I feasibly can do so and if you send a message to me to support that fact.

August E. Kehr
 240 Tranquility Place
 Hendersonville, NC 28739

Email: akehr@juno.com
 Phone: 828-693-7551