

[Demeter Janakidisz - Yucca Hybrids](#)

Category : English Language Articles

Published by [Hadria](#) on 2007.01.18.

Like many other fans of plants I was primarily inspired by Zsolt Debreczy's book, Hardy Cacti, Agaves and Palm Lilies to find out about the Palm Genus Yucca. I first came across with Yucca filamentosa and later, working in the Botanical Garden of ELTE University, Budapest, I became acquainted with a number of more unusual species in the collection of the botanical garden...



(*Y. concava*, *Y. flaccida*, *Y. karlsruhensis*, *Y. aloifolia*, *Y. arcansana*  still as a *glauca* , *Y. recurvifolia*.) By the time we started to build the rock garden in the middle of the 1980's a number of newly purchased plants were waiting in plastic cups to be planted. I bought them for the garden from Gyula Szutorisz who had received seeds among others from Horst Kuenzler and Zsolt Debreczy. These newly purchased rare species were *Y. baileyi*, *Y. angustissima*, *Y. intermedia*, *Y. elata*, *Y. neomexicana*, *Y. stricta*, *Y. baccata*, *Hesperoyucca whipplei* and *Hesperaloe parviflora*.



Yucca baccata

From the garden of Ferenc Kurilla in Szigetszentmiklós, Hungary

Later on the collection received plants, such as *Y. gloriosa* or *Y. glauca*, from other collectors as well. Most of the plants developed well but the *Hesperoyucca whipplei* and the *Hesperaloe parviflora* did not turn out as expected and the *Y. baccata* did not survive either. As they were growing in the rock garden I tried to find out more about the plants, about their pollination, propagation and their needs. I have come across with references to hybrids in a few books. I've found out that *Y. aloifolia* can be pollinated by itself and by other species as well. One of my colleagues once brought some *Y. aloifolia* fruit from Croatia, which meant that there was an insect in the Mediterranean countries capable of pollinating the plant. The seeds germinated properly! I have heard about other species producing fruit in Hungary. In the garden of collector József Hódi Tóth a form of *Y. glauca* was productive while Mihály Vékony in Szentendre had a productive *Y. concava*. They were both insect-pollinated. I started to consider this unusual phenomenon. My efforts of pollination at the beginning were rather arbitrary in terms of results. It was not even clear whether these species were self-pollinating plants or other pollen was needed for their productivity. During pollination I realised that there was no pollen on all of the pollen sacs. The flowers are usually closed during the day, they open in the evening when intensive smell is released and therefore this is also the most active period of the pollinating moths. My efforts of pollination in the evening or early in the morning were more successful, except for maybe the *Y. baileyi* and the *Y. stricta* that also pollinated during the day and they were two of the most productive species also capable of self-pollination. The *Y. aloifolia* is also autogamic but it is worth pollinating in the evening. I happened to be really lucky one time when the *Y. aloifolia* planted in the cactus house of the botanical garden and flowering always around August and September surprised me with a flower bud in the spring. Its entire development coincided with those of the species outside, and thus I could successfully pollinate it with almost all the species; 17 plants became productive and yielded. I also performed self-pollination for control. Cross-pollination was carried out by the following species: *Y. arcansana*, *Y. baileyi*, *Y. neomexicana*, *Y. filamentosa*, *Y. concava*, *Y. stricta*, *Y. karsruhenzis*, *Y. elata*, *Y. gloriosa* and *Y. recurvifolia*.



/Yucca elata/

From the garden of László Balogh in Tiszasas, Hungary

Unfortunately I did not use some of the seeds until their germination period was over but those that sprang produced quite a few of very different plants in spite of the fact that the mother plant producing the seed was *Y. aloifolia*. Shortly after their sowing the plants showed a vitality characteristic of hybrids in general. The *Y. aloifolia* and *filamentosa* x hybrid overgrew both of its parents that I also planted from seeds as control.



/Yucca aloifolia x arcansana/

From the garden of Ferenc Kurilla in Szigetszentmiklós, Hungary

The *filamentosa* was twice in size at the same age. Since then a lot of the plants have proved to be

hardy and some of them have revealed their flowers. We have carried on with cross-fertilisation, one of which took place in the former cactus garden of László Balogh in Tiszasas. They appear to be promising. We are working on a hybrid between a *Y. gloriosa robusta* and a short-trunked and richly flowering *Y. elata*.



/Yucca gloriosa v. robusta/

From the garden of László Balogh in Tiszasas, Hungary

Both me and my fellow collector, Ferenc Kurilla (who has several of these hybrids) have performed pollination but interestingly enough only the *gloriosa* became productive. The fruit of the *Y. gloriosa* appeared to be similar from the outside to that of the *aloifolia* but in the inside the gluey flesh was replaced by seeds nicely arranged in close order also similar to those of the *aloifolia*. Pollination was performed around 7 a.m. An interesting fact about the *Y. gloriosa* and the *recurvifolia* is that they look very similar to the specie *aloifolia*. Other sources also mention that these two species might be the hybrids of *aloifolia*. Another fact supporting this hypothesis is that both *Y. gloriosa* and *Y. recurvifolia* grow in the same areas as the two supposed parents, *Y. aloifolia* and *Y. filamentosa*. I believe that this hypothesis may be correct because the plants spearing and developing from the *Y. aloifolia* and *filamentosa* hybrid seeds I planted look just like *Y. gloriosa* and *Y. recurvifolia* to the extent that even an expert would find it difficult to differentiate them. The only difference might stem from the fact that we cross-fertilised clean species while in nature hybrids are cross-fertilised over and over again with one or the other species, thus maintaining a intermediate state but in controlled pollination they produce offsprings of the basic species.



/Yucca aloifolia x bailey/

From the garden of Ferenc Kurilla in Szigetszentmiklós, Hungary

Pollination:

Pollination can be performed most effectively early in the morning or in the evening. The pollination time may vary among species; therefore it is best to copy the way it happens in nature.



/The flower of Yucca baccata/

We need to find the pollen sac in the flower that appears to contain pollen. I usually take the pollen on a well-developed cactus thorn and bring it to the inside of the pollen tube. Some people use a thin brush. Using pollen from more than one pollen sacs also increases our efficiency. The rising of the future pollen sacs indicates the productivity of the flower and it usually takes place after three days

(except for *Y. aloifolia*, *Y. gloriosa* and *Y. recurvifolia*). The pericarp is divided into three parts and six sections with at least 15-20 seeds in each section. There are often white and black non-germinating seeds among them that may also depend on the level of productivity and maturity. The sacs of species wintering outside usually grow ripe by August or September.

The sowing of *Yucca* seeds:

Ripen seeds are to be sown immediately. The sown seed usually spears within 2-4 weeks above 20 C°. Below 20 C° spearing becomes slower. Sometimes it happens that the seed lies for even a year. Seeds very rarely germinate after 3-4 years. I sow the seeds into perlite that has proved to be the best solution. You might apply fine pearl-stones for covering that ventilate well and provide some support to the seedlings so that they can pierce deeper into the light perlite. The seedlings can stay in this substance for up to a year especially if we occasionally provide them with some nutritive solution. Due to its production perlite is a sterile material but there are a few insects and pestiferous fungi capable of ruining the sowings. One of those is the larva of *chironomus plumosus* damaging the seeds when they start germinating so the plant requires spraying in due time. Seedlings with two leaves can be planted separately into deeper cups or pots to provide space for the roots pressing downward. It is advisable to plant them out to their permanent habitat as soon as possible because they develop faster if they can freely spread their roots. Young seedlings can be kept under 10 C° during the winter in relatively dry circumstances and watered once in every 2-3 week.



/Yucca aloifolia x stricta/

From the garden of Ferenc Kurilla in Szigetszentmiklós, Hungary

Vegetative Propagation of *Yuccas*:

Atlantic and subtropical species can be propagated by side sprouts, rooting cuttings, trunk division or the separation of rhizomes in case of trunked species. It is more difficult to root narrow leafed species from the desert therefore they can be propagated from rooted sprouts or rhizomes. The best time to do this is in April or August. The rhizomes separated from the *Y. aloifolia* in August produce leaves in October.

During the rooting of soft leafed species the leaves should be cut back by 2/3 in order to fit the rootless rosette leaves economically and reduce the size of their evaporating surface. Perlite or sieved

river-sand can be used for the rooting. Cut surfaces should be dipped in charcoal-dust or fungicide and left to dry for at least 1-2 days. Rooting hormones can accelerate the process. Then we plant them into pots in a half-shaded area and water the plants 2-3 times a week, then just wait patiently. We may occasionally water the leaves by some nutritive solution in order for faster results. The rooted plants should be planted into their permanent habitat in spring in order to leave them time for rooting.

A list of the hybrids I made:

Yucca aloifolia × *filamentosa*

Yucca aloifolia × *baileyi*

Yucca aloifolia × *elata*

Yucca aloifolia × *arcansana*

Yucca aloifolia × *recurvifolia*

Yucca aloifolia × *stricta*

Yucca baileyi × *recurvifolia*

Yucca baileyi × *gloriosa*

Yucca baileyi × *stricta*

Yucca arcansana × *angustissima*

Yucca angustissima × *arcansana*

Yucca stricta × *recurvifolia*

Yucca concava × *stricta*, *filamentosa*?

Yucca gloriosa v. *robusta* × *elata* (with Ferenc Kurilla)

Yucca stricta × *baccata*

Demeter Janakidis