

Breeding for fragrance in *Phalaenopsis*

Gab van Winkel looks at why and how Floricoltura took on the challenge of breeding fragrant moth orchids

PHOTOGRAPHY: FLORICULTURA, UNLESS STATED OTHERWISE



Phalaenopsis
'Goodnight Kiss'
is a new release
in the AromorA
Series.



Other releases in the *Phalaenopsis* AromorA Series include 'Saffron Star' (left), 'Secret Fragrance' (above) and 'Love Potion' (right).



A **BLACK TULIP**, a blue *Cattleya*, a red *Phalaenopsis* – those are the usual dreams of flower breeders. But a fragrant *Phalaenopsis*? In this article I explore how Dutch breeders Floricultura took the challenge to breed for fragrance in *Phalaenopsis*, resulting in its AromorA series.

'In flower breeding, fragrance is underestimated,' says Marc Eijsackers, marketing manager of Floricultura, a worldwide orchid breeder from the Netherlands. 'Colour, shape, longevity, size and number of flowers are easily presented in a catalogue. But how do we convey fragrance?'

Why breed for fragrance?

'Fragrance may be difficult to present in an orchid catalogue, but it is an emotion for people. It seduces, creates new memories or brings back

memories of happy times. That is what we want to achieve with our AromorA Series,' says Marc.

At present, Floricultura has six fragrant *Phalaenopsis* hybrids in its AromorA series. 'We believe that fragrant orchids add another dimension to the marketing mix in the value chain. For our customers – commercial orchid growers – it adds value and a way to stand out from the crowd. The series name AromorA is a positive connotation of 'aroma' and 'amore' – a pleasant fragrance that you love.'

Floricultura began to introduce hybrid series three years ago. The first was Lingua, a series of large-lipped *Phalaenopsis* cultivars. 'Instead of entering the market with one big undifferentiated assortment of *Phalaenopsis*, we think series or segments will contribute to a better positioning of special orchid cultivars', says Marc. The

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Phalaenopsis
(AromorA Series)
'Sunset Love' has
a desirable mix
of colours.



cultivars 'Secret Fragrance' and 'Goodnight Kiss' are being produced in limited volumes only, with a first commercial release set for early 2023, but are not sold exclusively to one or two growers.

How to breed for fragrance?

'Obviously, breeding for fragrance starts with selecting fragrant *Phalaenopsis* parents,' says master breeder Hans de Jong from Floricultura. 'Most *Phalaenopsis* species used for breeding in the past, such as *P. amabilis* from Indonesia, are not or slightly fragrant. So, we had to start from scratch and see how fragrant *Phalaenopsis* parents could contribute fragrance to our nice-looking hybrids.'

'Developing fragrant orchids takes as much time as regular hybrids – about eight years. You look for scent in the species, for example in *P. amboinensis*, *P. violacea*, or hybrids of them. If you make hybrids with them, you may also take their negative properties along. So, the trick is to choose another parent that counterbalances the deficiencies.

'Fragrant flowers often have a shorter life because producing fragrance costs energy. If you manage to retain the scent, you can continue hybridising, but that will still take about eight years. Of course, it is possible to develop new hybrids from existing good selections, but each

further crossing can make the share of fragrance less, because you are further away from the original scented orchid.'

As presently understood, the genus *Phalaenopsis* contains 86 species, which occur from south Japan, through China, the Himalaya and south-east Asia, Taiwan, the Philippines and Indonesia, to north Australia. About 20 of these have fragrant flowers. Could those fragrant species contribute to a breeding programme for fragrance in *Phalaenopsis*?

Fragrant or not fragrant?

Flowers are, of course, fragrant not to please us but to attract their pollinator. That pollinator may experience quite different fragrances than we humans do. But, as we have only our own nose, fragrant is here defined as fragrant to us.

The 20 fragrant *Phalaenopsis* species are reported as 'strongly' fragrant, although the literature often gives contradictory information. Rarely is the exact fragrance described. Fresh, like lemon? Spicy, like cinnamon or cloves? Sweet, like honey? As in flower breeding, botany suffers from a lack of appreciation for fragrance. As an excuse for botanists, herbarium specimens, from which most orchid species are described, do not reveal their original fragrance.

Fragrance often depends on the time of the day. Bees are active in the morning, moths operate at dusk, so the flower invests in fragrance only at the right moment. And finally, botanists differ in the sensitivity of their noses.

Try it yourself!

Most fragrant species belong to section *Polychilos*, with *P. violacea* having the strongest perfume of the whole genus. So far, *P. violacea* has been used mainly to transmit strong colour to its progeny. Existing hybrids with that background may be fragrant already.

Several species from section *Aphyllae* are fragrant too, but they have small flowers. Coming from the Himalaya, they require a cool, dry winter in which they may even shed their leaves, as the section name implies. Breeders have to consider whether these are properties that should be introduced to breeding lines.

In conclusion, breeding for fragrance in *Phalaenopsis* has potential, as Floricultura has shown. But breeding for fragrance still holds many secrets, and many prospects. Try it yourself, and if you are successful in breeding a pleasantly fragrant and beautiful *Phalaenopsis*, contact Floricultura! ○



Phalaenopsis (AromorA Series) 'Dusty Belle' has a bushy appearance.



HERMANTER BORCH

Phalaenopsis amabilis subsp. *rosenstromii* is a common parent but has little scent.



HERMANTER BORCH

Phalaenopsis amboinensis has strong scent.



ALMA COMPENHOLE

Phalaenopsis violacea Norton strain gives a spicy scent and rich colour to its offspring.

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Gab van Winkel is editor of *Orchideeën*, the bimonthly journal of the Netherlands Orchid Society.

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