



Perfumery Insight: Cyclamen Aldehyde

Few flavor ingredients are irreplaceable, but this one comes close

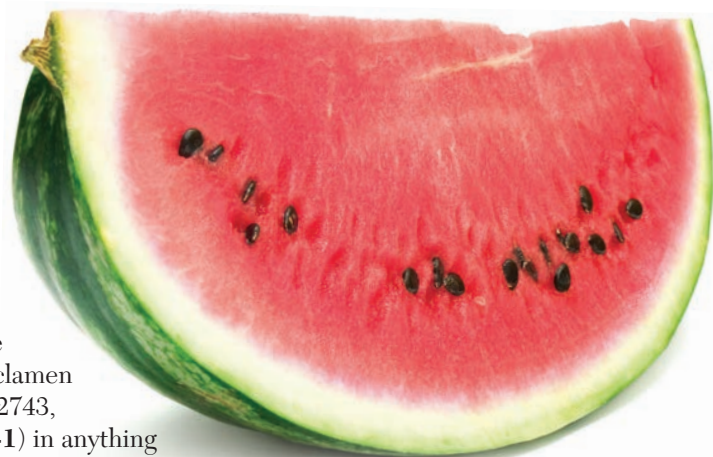
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Communication between flavorists and perfumers is sadly often limited to chance encounters in the corridors. And even when ideas do manage to wing their way across the great divide, they can all too easily fall on barren ground. As flavorists we have become obsessed with the idea that nature is our guiding light. We are highly suspicious of chemicals that clearly fall entirely outside that comfortable, logical category. The only exceptions we normally encounter are chemicals that are very similar to familiar materials from nature, for example ethyl maltol (FEMA# 3487, CAS# 4940-11-8) and maltol.

Left to my own devices it would have been a very long time indeed before I would have thought of using cyclamen aldehyde (FEMA# 2743, CAS# 103-95-7) (F-1) in anything whatsoever. It is an archetypical fragrance ingredient, highly substantive, with great bloom, but entirely artificial and possessing the kind of overwhelming floral intensity that invariably irritates nearby diners when it is used injudiciously in a fine fragrance.

The conversation in question started with a request for me to come up with ideas for an apple fragrance. I had many ideas of what might work, and I also knew which flavor ingredients definitely would not work. At the end of my recital of quite a long list of possible ideas, the perfumer seemed surprised and asked why I had not included cyclamen aldehyde. I was tempted to say that I hadn't included it because it would turn a perfectly good flavor into a perfumed monstrosity, but thankfully I didn't.

I did go away and think about it and eventually, full of skepticism, I tried it. I always try new ingredients at a high level initially to establish an effect and then quickly work down to a lower level. At a high level it was, as expected, horribly perfumed in character. Surprisingly, however, once the level was reduced to a point where the ingredient was no longer readily identifiable, it transformed miraculously into a highly attractive apple skin note.



Very few flavor ingredients are literally irreplaceable, but cyclamen aldehyde comes very close. There are a number of other broadly similar chemicals but it is hard to think of any that are FEMA GRAS listed and have such a characteristically cyclamen rather than simply a lily profile.

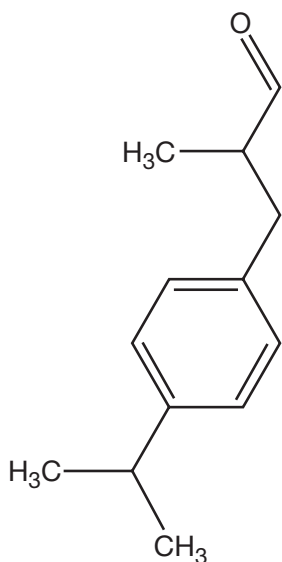
Tropical Fruit Flavors

Watermelon: Apple was the context of my initial experience of cyclamen aldehyde, but watermelon is far and away the most obvious flavor affinity for this chemical. The effect is to add lift and welcome complexity to the rather simplistic notes of the typical unsaturated aldehydes that always underpin this flavor profile. Levels of use can vary radically, but 300 ppm is a good place to start. This and all subsequent dose rates refer to the level of use in a flavor that is intended for use at 0.05% in a taster, a ready-to-drink beverage or a bouillon.

Mango: A useful level in a reasonably authentic style of mango flavor is 50 ppm, and the effect subtly augments the myrcene (FEMA# 2762, CAS# 123-35-3) note of mango skin. Many less authentic mango flavors veer considerably in the direction of melon, and for these flavors a level

Cyclamen aldehyde

F-1



of 100 ppm or even more can be acceptable.

Papaya: Similar comments apply to papaya flavors, but it is better to stick to relatively low levels of cyclamen aldehyde to avoid the ingredient becoming obvious, around 30 ppm.

Passion fruit: A good level for passion fruit in the flavor is 30 ppm. At this concentration, cyclamen aldehyde gives a very natural effect and lifts the flavor noticeably.

Kiwi: Kiwi is quite a subtle flavor and, although this ingredient blends into the profile very well, the levels are ideally quite low and should not exceed 30 ppm.

Fruit Flavors

Apple: Levels of use can also vary in apple flavors, with higher levels tending to shift the profile more toward skin notes and green apples. If you are aiming for a sweet, red apple character, 10 ppm in a flavor is a good place to start, and 40 ppm is more appropriate for a green apple note.

Peach: A useful addition to fresh peach flavors is 20 ppm of cyclamen aldehyde. At this level it brightens the profile and augments the peach skin character.

Lemon: For lemon juice style flavors, 20 ppm is also a good level, working particularly well when it is

used in conjunction with jasmine notes such as Hedione.

Apricot: Rather lower levels, in the region of 10 ppm, are better in apricot flavors although the effect is similar, adding to the skin character.

Strawberry: In authentic style fresh strawberry flavors, 10 ppm is also a good level of use, but higher levels can be used in older style flavors, where the profile contains a significant melon note.

Pear: Levels of use in pear flavors vary dramatically, and the effect can be similar to that in apple flavors. A good place to start, once again, is 10 ppm.

Raspberry: This ingredient only plays a small role in modern raspberry flavors, but it is interesting to experiment with levels around 5 ppm.

Perfumed Flavors

Musk: Levels of use vary dramatically, depending on the effect that is desired, and can range up to 200 ppm for a floral powdery musk note.

Rose: Cyclamen aldehyde can be quite useful in rose flavors, especially to add complexity and lift to more economical synthetic flavors. Levels vary radically, but 30 ppm is a reasonable starting level.

Jasmine: The same comments apply to jasmine, but the best levels are much lower, in the region of 10 ppm.

Other Flavors

Cucumber: Relatively high levels of cyclamen aldehyde can work well in cucumber flavors, up to 300 ppm, but lower levels are better to maintain a more natural profile.

Green tea: Levels used in green tea flavors vary, but 20 ppm is a good starting point, with higher levels practical in flavors with a more herbal character.

Honey: Typically 20 ppm is also ideal for use in honey flavors, giving lift and an attractive light floral character. Slightly higher levels can be used in flavors that are intended to be specifically floral, especially lavender honey flavors.

Cream: This raw material may seem an almost eccentric recommendation for cream flavors, but low levels, in the region of 10 ppm, can add interesting top notes and a faint hint of sourness, adding to realism.

Black tea: Cyclamen aldehyde is not as useful in black tea flavors as it is in green tea flavors, but it is still interesting at around 5 ppm.

Vanilla bean: At 5 ppm or less this ingredient also adds a hint of useful complexity to vanilla bean flavors.

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