PREMIUM EDITION

AROMABAR OF WINE SCENTS





NOTE

Before you get starting sniffing, please note that the aromas are NOT intended for consumption. Please seek medical advice in the event of accidental ingestion. Avoid any contact of the essences with your skin and eyes. Keep the vials away from children. Simply sniffing the open vial is sufficient; please do not pour out the essences. The vials are not leak-proof. Make sure not to mix up the caps if you have several vials open at the same time. The aromatic essences contained in the vials are sensitive to light. However, their quality will not be diminished in any way when used for normal lengths of time – even after several hours. Always close the caps tightly so that the aromas remain intact for years to come.

THE MENTALITY OF DRINKING WELL

WHY SNIFF WINE?

There is always the gesture of sniffing the cork, swirling and agitating the wine in the glass, and tasting it. All of these things serve to enhance our enjoyment of wine and to activate the aromatic elements contained in it. This is because oxygen is required for the aromas in the wine to emerge so that we can sense them with our noses. The more the subtleties of a wine's aromatic character are perceived by us, the more we enjoy it.

Let the AROMABAR of Wine Scents inspire you to train yourself to identify and describe a wine's aromatic character more precisely than before, thereby intensifying your enjoyment of wine.

Because my personal aim and our company's mission is to recognise and differentiate between wine qualities, and to promote a mentality of "drinking well".

Best regards,
Sven Peters
AROMABAR of Wine Scents

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Welcome to the exciting world of wine aromas! With the AROMABAR of Wine Scents you will be able to recognise the scents commonly contained in wine.

With time and a bit of practise, you will be able to distinguish and classify grape varieties, winemaking regions and their wines. Experiment with the aromas and try to guess the various scents. Compare the bouquet of a wine with the aromas in the vials. You'll see just how easy it is to train your nose and how simple it can be to recognise and name wines and their aromas.

Have fun with your AROMABAR of Wine Scents and the sixty essences.



Awakening your senses: How to taste wine correctly

TASTING WINE

In order to convey the wine to all of the sensitive parts of your tongue, you want to distribute each sip you taste equally over your palate. This is best accomplished by working the wine around your palate while drawing in air at the same time - you'll notice this at a tasting by the distinct slurping noises made by participants. This procedure of "chewing" the wine – aerating it and moving it around your mouth - volatises the aromas, which are then conveyed to the olfactory bulb via the passage connecting the nose to the throat. The sensory perception is most intensive at the moment of swallowing. For this reason, you should always taste several small mouthfuls of wine. Final impressions linger longest on the base of the tongue - not "remembered" so much as truly tasted and resonant. If the sensations

persist, the wine is said to have a long finish or aftertaste; if they are fleeting, the wine's finish can be described as short or flat.

Tasting wine with all of your senses is a complex proposition, because it involves processing a multitude of sensory impressions simultaneously. It is therefore useful to consider the various dimensions of taste individually. To this end you may want to evaluate aromas and their complexity as well as sweetness, acidity, alcohol content and body — in addition to this tannins in the case of red wines. Finally you will want to evaluate the balance of all of these factors in terms of harmoniousness. Based on these perceptions and with a bit of experience, you will be able to evaluate the character and quality of any wine you taste and offer your own personal judgement.



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Determining a wine's character

Fine wines are distinguished by a wide variety of aromas that can be found in an even wider variety of combinations. This incredible complexity is precisely what makes wine so interesting. For example, if a wine exhibits numerous aromas of equal intensity, it can be difficult to identify all of them. First you must "filter" out the various smells in your mind. When you can smell them depends primarily of how fleeting they are: The most delicate aromas are the most fleeting and you can discern them by sniffing the wine in the glass. Less volatile aromas are only released by agitating in the mouth and are said to develop "on the palate".

COMPLEXITY

A complex wine is one that exhibits a host of different aromas. At the opposite end of the spectrum are wines that offer just a few aromas and thus seem simple by comparison.

SWEETNESS

Sweetness is a taste impression caused most often by the sugar in wine. Generally this is residual sugar, that is sugar that has not been fermented into alcohol. Alcohol and glycerol contained in wine also contribute to its sweetness. The degree of sweetness is described using various terms ranging from sweet to dry.

ACIDITY

Various types of acids are to be found in wine, including acetic acid, malic acid, tartaric acid and lactic acid. The first two taste fairly aggressive, whereas tartaric acid and lactic acid are relatively mild. The acids in white wines lend the wine its basic taste and contribute to its ability to age. A wine's taste may range from mild to sour depending on how acidic it is and what type of acid is predominant.

TANNINS

Tannins are released from the skin, seeds and partly from the stems of grapes, espe-

cially during the fermentation of red grape varieties. If the wine is stored in wooden barrels, the wood also releases tannins. Tannins lend red wines their basic backbone in terms of taste: the tannic structure. The quantity and type of tannins are also predominantly responsible for the way red wines age and develop. Young, immature tannic wines make a hard impression on the palate, while older, mature tannins make a wine soft and mellow. White wine may also contain some tannin (e.g. from barrel storage), but its taste should not be discernibly tannic.

"WHO KNOWS TO ENJOY DOES NOT DRINK EVER AGAIN OF WINE,

BUT TASTES MYSTERIES." (SALVADOR DALÍ)

ALCOHOL

Alcohol is formed from the fermentation of sugar contained in grape must. It has an important preservative function. In terms of taste, alcohol affects a wine's sweetness and body. Wines with a very high alcohol content can leave a burning sensation in your mouth. Wines are described as light or heavy depending on the volume of alcohol they contain.

BODY

A wine's body is its combination of alcohol and extractives perceived as a whole. Extracts are defined as any ingredients that are not highly volatile: Sugar, acid, glycerol, and tannins as well as colour pigments and mineral substances. The more such ingredients a wine contains, the more full-bodied it is. The body of a wine is not determinable so-

lely by how it exhibits these individual substances, but most of all by the sum of sensations it leaves in the mouth. A full-bodied wine, for example, may have a quality of creaminess or a viscous texture. Simply put: It leaves a "full" feeling in your mouth. By contrast, any impression of "wateriness" is a lack of body.

HARMONY

Wines described as harmonious are well balanced in terms of their aromatic composition, sweetness, acidity, alcohol and tannic content. This balance is disturbed if individual components are overly dominant or lacking, or perceivable in an unpleasant manner. That said, what makes a wine well or poorly balanced is fairly subjective, with personal preferences and tastes playing a big role.

FINISH

The finish refers to all of the sensations that persist after you swallow the wine. The longer the length of finish of pleasant aromas and tastes, the better the wine is.

OVERALL EVALUATION

Try to take into account all of a wine's aromatic and taste impressions in their entirety. With a little experience, you will be able to characterise your impressions and use them to evaluate a wine's quality.



The world of aromas

The diversity of wine aromas is fascinating: They range from delicate floral and fruity scents to strong animal aromas and sometimes even chemical smells. The origin of all these aromas is likewise different: Whereas most odours stem from the grape variety itself, others arise during the winemaking processes of fermentation and maturation.

FRUITY AROMAS

Fruity aromas are extremely diverse: They can range from citrus fruits (grapefruit) to berries (blackcurrant) and stone fruits (cherry, apricot). Other fruity aromas are reminiscent of raisins, figs and bananas. Fruity aromas can be described in even greater detail by specifying whether the fruit is fresh, dry or cooked. It is relatively easy to discern fruit smells when you taste wine.

FLORAL AROMAS

Floral aromas can conjure images of blossoms of jasmine, roses, violets or geraniums.

VEGETAL AROMAS

Vegetal components can smell like grass, plant stalks, green pepper, eucalyptus, mint, tea or asparagus – and furthermore in their fresh, dried or cooked states.

SPICY AROMAS

Spicy components in wine make us think of many items we know from our kitchen cabinets, including pepper, cloves, liquorice, anise, cinnamon, and vanilla.

NUTTY AROMAS

A wine can also exhibit nutty aromas, such as hazelnut, almond and walnut.

EARTHY AROMAS

Earthy aromas in wine include nuances of soil or forest floor and all kinds of mushrooms, including truffles.

WOODY AROMAS

Woody scents in wine are usually a result of ageing in small oak casks and can smell of oak, cedar, or pine.

EMPYREUMATIC AROMAS

These fire- and heat-associated smells likewise arise from ageing in barrels,

and include coffee, caramel, chocolate, butterscotch, honey and even tobacco.

FERMENTATION AROMAS

These odours can be found most prevalently in young white wines. This smell of milk, butter, or yeast often diminishes after a few months.

ANIMAL AROMAS

Animal components or aromas reminiscent of damp dog fur, meat, horse, musk, a cowshed or leather often turn up in mature, heavy red wines.

CHEMICAL AROMAS

Scents that remind you of glue, petrol or other chemical components should not stand out, otherwise the wine is flawed. In this case the wine may also smell like vinegar, cardboard, the sulphur stench of a burnt match, rubber, diesel or tar.



BALL STIHM

WHITE WINES APPEAL TO OUR SENSES MAINLY BECAUSE OF THEIR FRESHNESS AND FRUITY AROMAS. WHICH AROMAS DOMINATE DEPENDS FIRST AND FOREMOST ON THE GRAPE VARIETY. IN A GOOD WHITE WINE, THE FRUIT TASTE IS COMPLEMENTED BY MINERAL OR NUTTY AROMAS, WHICH LEND THE WINE ADDITIONAL COMPLEXITY.

IF SWEETNESS AND ACIDITY ARE WELL-BALANCED TOO, YOU CAN LOOK FORWARD TO A WELL-ROUNDED AND ELEGANT DROP OF WINE.

"BORDEAUX MAKES YOU THINK OF SILLY THINGS, BURGUNDY MAKES YOU SAY THEM AND CHAMPAGNE MAKES YOU DO THEM." (ANTHELME BRILLAT-SAVARIN)

Fruity aromas are predominant in white wines

The main ingredient in wine is water, followed by alcohol. In terms of sheer quantity, at a mere one thousandth of a per cent, the substances that constitute a wine's bouquet and aroma are present in miniscule amounts. Yet these fractions of a per cent exert a powerful influence and are decisive in shaping a wine's taste. White wines generally exhibit characteristic aromas of yellow fruits including apricot, apple and peach. Although this fact is undisputed, to this day there is no definitive explanation as to why this is. Each grape variety contains its own aromas. These vary, however, depending on the climate and the soil in which the grape is grown. The less grapes on a vine, the more concentrated the wine and the more delicate both its fruity and mineral aromas. But the

time of harvest is likewise a decisive factor in determining which aromas will eventually characterise the white wine. Normally harvested grapes, completely fermented and drunk as young wines, exhibit fresh aromas (such as apple), while eiswein – a super-concentrated, extremely sweet wine made from frostbitten grapes – is characterised by an abundance of heavier aromas including apricot. In warmer growing areas such as Australia and South Africa, grapes for white wines are frequently gathered in the cool of the night. This method benefits fruitier aromas by intensifying them. For the same reason, the temperature is continuously controlled and regulated during fermentation to encourage the development of more pronounced fruity aromas.

Apple

Banana



Orange

10

Grapefruit

11

Lemon

THE WHITE WINE AROMAS AND THEIR CORRESPONDING WINES 21

DMA	GRAPE VARIETIES	TYPICAL WINES
Pineapple	Pinot Gris/Pinot Blanc/ Riesling /Verdelho	Californian Chardonnay
Pear	Pinot Gris/Kerner/Auxerrois/Sylvaner	Pinot Blanc from Palatinate/ Chasselas from Switzerland
Gooseberry	Sauvignon Blanc/Scheurebe/Sylvaner	Sauvignon Blanc from New Zealand, South Tyrol or the Loire
Apricot	Kerner/Riesling/Pinot Blanc/Gutedel	Sémillon in Sauternes
Honey	Gewürztraminer/Marsanne/Furmint	All sweet wines including Auslese, Sauternes, Vin Santo
Peach	Riesling/Viognier/Auxerrois/White Burgundies/ Cortese	Auxerrois from Baden/mature wines
Banana	Chardonnay/Pinot Blanc/Pinotage/Sangiovese	Gamay from Beaujolais
Apple	Riesling/Chardonnay/Prosecco/Trebbiano/ Furmint/Elbling	Riesling from northern German wine-growing regions
Orange	Gewürztraminer/Huxelrebe/Viognier/ Pinot Meunier/Kerner	Viognier from Australia or southern France
Grapefruit	Scheurebe/Pinot Gris/Vernaccia	Australian Chardonnay/Champagne
Fig	Chardonnay/Pinot Noir	Port wine from Portugal/Chenin Blanc from South Africa
Lemon	Riesling/Müller-Thurgau/Marsanne/Trollinger/ Assyrtiko	Sémillon from Bordeaux
	Pineapple Pear Gooseberry Apricot Honey Peach Banana Apple Orange Grapefruit Fig	Pineapple Pinot Gris/Pinot Blanc/ Riesling /Verdelho Pear Pinot Gris/Kerner/Auxerrois/Sylvaner Gooseberry Sauvignon Blanc/Scheurebe/Sylvaner Apricot Kerner/Riesling/Pinot Blanc/Gutedel Honey Gewürztraminer/Marsanne/Furmint Peach Riesling/Viognier/Auxerrois/White Burgundies/ Cortese Banana Chardonnay/Pinot Blanc/Pinotage/Sangiovese Apple Riesling/Chardonnay/Prosecco/Trebbiano/ Furmint/Elbling Orange Gewürztraminer/Huxelrebe/Viognier/ Pinot Meunier/Kerner Grapefruit Scheurebe/Pinot Gris/Vernaccia Fig Chardonnay/Pinot Noir Lemon Riesling/Müller-Thurgau/Marsanne/Trollinger/



RED WINE

RED WINES DIFFER FROM WHITE VARIETIES MOSTLY THROUGH THEIR TANNINS, WHICH GIVE THEM A BASIC TASTE STRUCTURE AND ARE RESPONSIBLE FOR THEIR ABILITY TO AGE. THEIR AROMAS CONTAIN BOTH FRUITY ASPECTS

AND SPICY OR EARTHY TONES. THE SPECIAL PROCESS INVOLVED IN MAKING RED WINE — MACERATION — INFUSES

ADDITIONAL FRAGRANCES FROM THE GRAPE SKINS.

"NO ENJOYMENT CAN BE TRANSITORY,

FOR THE IMPRESSION IT LEAVES IS PERMANENT."

(JOHANN WOLFGANG VON GOETHE)

Wide range of aromas in red wines

There is a great variety of aromas in red wines: the fruity flavours range from fresh red fruits such as strawberry, raspberry or cherry to heartier tasting fruits as blackcurrant, plum or blackberry. Spicy aromas are also very common in red wines – they remind us for example of mint, pepper or vanilla. Heavy, mature red wines often develop earthy nuances that are reminiscent of truffles or other mushrooms. Animal aromas (horse, meat or leather) are also characteristic of this type of wine.

Every grape variety exhibits specific aromas, which may vary considerably according to the climate and

the soil where the grape was grown.

In traditional red winemaking methods, the grape's skins are retained after crushing and steeped in the fermenting must in a process known as maceration. The must also contains the grapes colour and tannin extracts. Very tannic wines mature longest. When young, however, such wines are often hard and inharmonious, with fruity aromas smothered by the dominant tannin. Another factor affecting aromas is the fermentation temperature. The optimum temperature is around 25° C/77° F. Lower fermentation temperatures yield fruitier wines; higher temperatures result in more tannic wines.

THE RED WINE AROMAS AND THEIR CORRESPONDING WINES

TYPICAL WINES

GRAPE VARIETIES

AROMA

15 Plum 14 13 16 18 Wild berries Strawberry Raspberry Blackcurrant Cherry 21 20 22 19 23 24 Blackberry Violet Mint Pepper Almond Green pepper

13 Wild berries	Pinot Noir/Pinot Meunier/Dornfelder/Merlot	Lagrein from South Tyrol
14 Strawberry	Gamay/Pinot Noir/Pinot Meunier/Samtrot/ Brachetto	Beaujolais/often dominant in rosé wines
15 Plum	Nebbiolo/Blaufränkisch (Lemberger)/Pinot Meunier/Samtrot	Châteauneuf du Pape/Merlot from Pomerol/ St. Emilion
16 Raspberry	Pinot Noir/Cabernet Franc/Cabernet Sauvignon	Rhône/Burgundy/Bourgueil from the Loire/ Beaujolais
17 Blackcurrant	Cabernet Sauvignon/Syrah/Pinot Noir/ Blaufränkisch (Lemberger)/Dornfelder	Bordeaux/Chilean Cabernet Sauvignon
18 Cherry	Nebbiolo/Blaufränkisch (Lemberger)/Schiava (Vernatsch)	Barbera from Piedmont/Sangiovese from Tuscany
19 Blackberry	Zinfandel/Dornfelder/Samtrot/Blaufränkisch (Lemberger)/Pinot Noir	Pinot Noir from Burgundy
20 Pepper	Cabernet Franc/Syrah/Grüner Veltliner/ young Vintage Port	Rioja/Piedmont/Grüner Veltliner from Austria/ Syrah from the southern Rhône
21 Violet	Sangiovese/Cabernet Franc/Pinot Noir/ Nebbiolo	Blauer Portugieser from Austria
22 Almond	Trebbiano/Sangiovese/Vernaccia	Vernatsch from South Tyrol/Valpolicella from Veneto
23 Green pepper	Cabernet Sauvignon/Lemberger/Dornfelder	Young Bordeaux/Malbec from Argentina
24 Mint	Cabernet Sauvignon/Cabernet Franc/Sylvaner	Shiraz from Australia, particularly Coonawarra



OAKED WINE

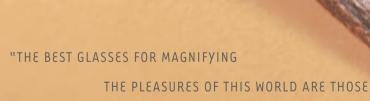
"BARRIQUE" — BARREL IN FRENCH — IS A MAGIC WORD FOR MANY WINE AFICIONADOS. THE REASON IS THAT LEAVING RED AND WHITE WINES TO MATURE IN THE SMALL 225L OAK CASK LENDS THEM FAR GREATER AROMATIC COMPLEXITY. THAT'S BECAUSE THE BARRELS, BURNT INSIDE BEFORE USE, TRANSFER A GREAT MANY FRAGRANCES TO THE WINE. THESE ARE MAINLY WOOD AND ROASTED AROMAS, REMINISCENT OF VANILLA, CHOCOLATE OR CEDAR FOR EXAMPLE.

Oak barrel aromas

The French invented the idea of ageing red and white wines in oak barrels. This fermentation method has become tremendously popular around the world over the past twenty years, a fact due in part to the globalisation of the wine industry. Another reason for this development is that high-quality, full-bodied red wines with complex aromas are becoming more and more popular, resulting in a large market for barrique wines from regions other than those traditionally known for them.

The main reason producers of quality wines so often resort to this rather cost-intensive method of ageing their divine drops is that wine is positively influenced in many ways through the intensive contact with the oak wood. The wood imbues it with additional aromas and tannins, which in turn add to it more complexity and longevity. When oak barrels are used, the wine picks up flavours of vanilla and liquorice or roasted aromas such as coffee, toast, caramel and chocolate. Extended ageing in barriques can result in pronounced oaky or cedary nuances. The particular aromas that develop and how intensively discernible they are depends on a host of dif-

ferent factors: first of all is the grape variety – each kind reacts differently to contact with the wood wall and with oxygen. Additionally important is the type of wood used: oak casks are now produced all over the world. In France, oak barrels are frequently made from the forests of Limousin or Allier. Spanish wines are usually aged in American oak barrels, which lend them a heartier taste and stronger aromas. Also significant, however is the degree to which the wooden barrel walls are burnt - often described as toasted - before initial use. In this process the wooden planks of the barrel are actually "roasted" over an open fire. The more intensely a barrel is burnt, the more roasted aromas are imparted to the wine that later matures in it. The age of the barrels is extremely important as well: While new oak barriques transfer much tannin and intensive aromas to the wine. a barrel that has seen several years of service is quite literally washed out - it can no longer develop any kind of aromatic effect



FROM WHICH WE DRINK."

(JOACHIM RINGELNATZ)

THE OAKED WINE AROMAS AND THEIR CORRESPONDING WINES

GRAPE VARIETIES

TYPICAL WINES Merlot/Tempranillo/Shiraz Bordeaux/Red Burgundy 25 Plain chocolate **26** Coffee Cabernet Sauvignon/Tempranillo/Pinot Noir Burgundy 27 Leather Cabernet Sauvignon/Pinot Noir Syrah from southern France 28 Cedar Cabernet Sauvignon/Merlot/Cabernet Franc Cabernet Sauvignon from Bordeaux 29 Butter Chardonnay/Merlot/Dornfelder 25 26 27 28 29 30 **30** Caramel Coffee Leather Plain Cedar Butter Caramel chocolate **31** Truffle Merlot from Pomerol/Chardonnay from Burgundy Bordeaux/generally found in older wines **32** Mushroom Merlot/Nebbiolo 33 Smoke Pinot Noir/Shiraz/Frühburgunder (Pinot Madeleine)/Pinot Meunier/Sylvaner Brunello from Tuscany Rioja, Spain **34** Vanilla Châteauneuf du Pape/Bordeaux/Beaujolais/ **35** Liquorice Grenache/Shiraz/Sangiovese 31 32 33 34 35 36 Truffle Mushroom Smoke Vanilla Tobacco Liquorice Cabernet Sauvignon/Merlot/Shiraz/Zinfandel Mature Bordeaux **36** Tobacco

AROMA



WINE FAULTS

CERTAIN AROMAS ARE UNDESIRABLE IN WINES. THESE ARE CALLED OFF-AROMAS, AND CAN OCCUR DURING THE WINEMAKING PROCESS. OFF-AROMAS ARE REGARDED AS WINE FAULTS. THEY ARE MOSTLY NOTICEABLE AS STRONG CHEMICAL SMELLS, BUT CAN ALSO HAVE A PUNGENT ANIMAL OR VEGETABLE CHARACTER. THE ABILITY TO DETECT OFF-AROMAS AND THUS WINE FAULTS COMPLETES THE ART OF WINE-TASTING.

"IF YOU DON'T DRINK WINE, YOU MAY MISS MUCH ENJOYMENT —

BUT IF YOU DRINK WINE INCORRECTLY,

YOU RUIN YOUR OWN AND OTHERS' ENJOYMENT."

(JOACHIM RINGELNATZ)



When faulty aromas dominate a wine

A wine-tasting is invariably a sensual experience, but it can end up being less of a tonguecaressing and more of a distressing one. The culprit for this are off-aromas or faults that occur during wine production or later en bouteille. Some disappear after a few minutes, while others ruin a wine irrevocably and render it undrinkable

Taste faults that manifest themselves as the smell of a burnt match, a thin finish or stinky empyreumatic smells are often grouped as chemical or fermentation faults or irritants. These faults can occur in young wines that were not aerated sufficiently prior to bottling. Such reduced smells usually wear off in time. If you encounter such "bottle stink", leave the bottle uncorked or decant the wine. More sinister off-aromas include "bonafide" hydrogen sulphide smells. You will recognise these by an acrid, pungent sensa-

tion in your nose. Unfortunately, no amount of cellaring can help in this case. Smells of glue or vinegar are due to volatile acids. If acid decomposition is uncontrolled, wine can be infected with lactic acid bacteria that produce the aromatic substance diacetyl. Diacetyl causes off-aromas in wines characterised by a typical, mild sour-milk smell and a taste reminiscent of yoghurt, buttermilk, cheese or sauerkraut. Corked or corky flavours are among the most annoying wine faults. A corky off-aroma is caused by living microorganisms that produce a strong musty-smelling substance. In this case, unfortunately, nothing can be done — in other words, a corked wine cannot be imbibed.

One final tip: Never use wines with off-aromas in cooking, as the faults remain clearly perceptible even after being heated.

THE OFF-AROMAS FROM CORK TO VINEGAR

CORK

You will notice this unpleasant aroma when you sniff the wine. However, the taste of a corked wine is even nastier. Natural aromatic substances in cork, moulds in wine cork or microorganisms in cork processing can all cause wine to have a corky off-flavour. The compound 2,4,6trichloroanisole (TCA) has been identified as the main cork-taint culprit. The common corky off-aroma is helped along by chlorine compounds in the sterilising solutions in the cork-production process. Characteristic descriptors include: mouldy, musty, rotting and coarse. An old, musty cellar is a good metaphor for this wine fault.

PETROL NOTE

Ripe Riesling wines, usually those that are grown in warm regions or during the warmer months, acquire a petrol note. Riesling wines from very warm regions such as South Africa or Australia can develop this petrol note, which is sometimes associated with the smell of kerosene or rubber, even after a short storage time. The wine contains the compound TDN (trimethyl-dihydronaph-

thalene) which develops in the grapes under intensive amounts of sunlight and goes on to develop further in the wine. Many wine connoisseurs prize this note as being a typical, unique bottle age of ripe Riesling wines. The compound sometimes occurs in other varietals but is not so intense and is therefore much less noticeable.

UNTYPICAL AGEING NOTE

The smell of an untypical ageing note is often described as wet cardboard or mothballs. The cause of this naphthalene offflavour is 2-aminoacetophenone (AAP). Climatic influences – for example, hot, dry growing years – can facilitate the formation of an untypical ageing note during the ripening period. The reason is a lack of nitrogen due to aridity. An untypical ageing note is also favoured by toohigh yields, overworked vines and premature harvesting. These causes can be eradicated by tending vineyards correctly.

ONION

These forms of chemical and sulphury off-aromas comprise an extremely broad spectrum of smell descriptors. All chemi-

cal faults come from complex, sulphurous bonds known as mercaptans. Basically, the odours can occur in various phases of winemaking. Residual hydrogen sulphide reacts with alcohol during fermentation and in young wine to form these mercaptans, which smell strongly of onions. Among other causes, mercaptans are the result of too much sulphur dioxide added as a preservative.

LACTIC ACID

Malic acid is converted into far milder lactic acid in a process known as biological or bacterial acid decomposition. If the wrong bacterial strains are used or if malolactic fermentation occurs in an uncontrolled fashion, a wine fault arises. The fault is manifested by a typical sour-milk smell. In terms of taste, you may be reminded of yoghurt, buttermilk, cheese or sauerkraut.

LOVAG8

Residual hydrogen sulphide reacts with alcohol during fermentation and in young wine to form methanol and ethyl hydrosulphide: substances that smell of lovage.

This aroma is also an important indicator of more mature wines. The smell of lovage tends to be more perceptible in very mature red wines. See if you can discern this phenomenon. The lovage odour can be averted by strictly controlling yeast growth during fermentation.

VINEGAR

Acetic contamination is obvious if a wine reeks of vinegar and perhaps even tastes of it. This off-aroma is also described as sour, VA (for volatile acid) or pricked. In alcoholic fermentation, yeast converts sugar into alcohol. Bacteria can break down the alcohol into vinegar. The typical vinegary smell is less due to mildly-smelling acetic acid than to a host of esterification products, i.e. acids bound in alcohol. The cause is due to injury to grapes on the vine from hailstorms or wasp infestation. Vinegary aromas are avoidable by harvesting healthy grapes.

GLUE

The smell of glue is perceptible as annoying only at high degrees of intensity. It arises when acetic bacteria colonise damaged grapes to form acetic acid. If such grapes are not removed from the harvested grapes, acetic acid can combine with alcohol during fermentation to form the

solvent ethyl acetate, with its unmistakably pungent odour. This fault is described as acescent. Beyond that, too much wild yeast involvement during fermentation results in increased concentrations of esters. This off-aroma can be avoided by sufficient sulphurisation.

HORSE SWEAT

The cause of this off-aroma is the spoilage yeast Brettanomyces bruxellensis. The smell of stale horse sweat is an animal scent that triggers the following associations: dried cow dung, a stable or a monkey house. This off-nose is most prevalent in red wines that underwent lactic acid fermentation and were aged in wooden barrels used more than once. Preventive measures include scrupulously hygienic cellars and clean barrels.

SULPHUR

Due to its many beneficial effects, sulphur is an unavoidable preservative in wine-making. It offers protection against oxidation and microbial spoilage. Used in excess, sulphur has a pungent and sharp aroma in the glass. In extreme cases, it can even cause your eyes to water. This strong, hot smell should wear off after a few minutes of aeration. Excess sulphurisation can be avoided by adding the pre-

cise and correct amount of sulphur to the must. The latest legal guidelines prescribe that the words "contains sulphites" must appear on the back labels of any wine that has been treated with sulphur during its production process.

GREEN

If you notice a grassy scent and the wine tastes of green plants, then it is said to be green. In addition to smelling like freshly cut grass, you may make out the smell of crushed leaves, stems and seeds, or even green wood. Although usually this fault is to be found in young, immature wines that can still develop, it also occurs in acidic wines made from immature grapes that were harvested prematurely or can be caused by inadequate destemming or too-intensive pressing of the grapes.

CAULIFLOWER

This off-aroma is obvious immediately upon uncorking the bottle. It is very easily perceptible. Another fermentation-related vegetal off-aroma, the smell of cauliflower occurs mainly during fermentation and in young wines. The basic components of the odour are sulphurous substances in the wine that form from fermentation of the must with yeast.

THE 12 OFF-AROMAS



37 Cork



38 Petrol note



Untypical ageing note



40 Onion



41 Lactic acid



43 Vinegar



44 Glue



45 Horse sweat



46 Sulphur



47 Green



Lovage

48 Cauliflower

THE OFF-AROMAS AND THEIR CAUSES

CAUSES AROMA Aromatic substances or moulds in wine corks and/or microorganisms present during the corking process. **37** Cork **38** Petrol note The sign of mature Rieslings from warm regions or vintages has already developed in the wines after a short storage period. **39** Untypical ageing note Caused by insufficient water and nutrients from intense heat and arid conditions during the growing season or by exhausted vines. **40** Onion During fermentation and in young wine, hydrogen sulphide combines with alcohol to form mercaptans, which smell pungently of onion. 41 Lactic acid Lactic acid bacteria convert aggressive malic acid into mild lactic acid. If the wrong bacterial strains are used or if malolactic fermentation occurs in an uncontrolled fashion, the result will be a sour, lacticacid smell. Remaining hydrogen sulphide in fermentation and in young wine can react with alcohol to form methanol **42** Lovage and ethyl hydrosulphide. This aroma is reminiscent of lovage. Damaged fruit provides a breeding ground for bacteria and yeast, which form acetic acid in the grapes. **43** Vinegar **44** Glue Vinegar in injured grapes can combine with alcohol during fermentation to form ethyl acetate, which is dominated by a nail-varnish smell. **45** Horse sweat Typical in red wines that have undergone lactic acid fermentation. Used and/or unhygienic wooden barrels facilitate the spread of the yeast strain Brettanomyces bruxellensis, also known as brett. **46** Sulphur Sulphur dioxide is added to wine and barrels as a preservative. Too much sulphur can result in a pungent smell of a freshly-struck match. 47 Green Usually it is young, immature wines that give off a bitter, grassy scent due to too-intensive pressing of the grapes or too many green parts. 48 Cauliflower During fermentation and in young wine, hydrogen sulphide combines with alcohol to form mercaptans, which smell of cauliflower.

39



SPECIALITIES OF THE WORLD OF WINE

THE WORLD OF WINE HAS TEMPTING AND UNUSUAL DELIGHTS: GRAPE VARIETIES THAT SMELL OF ROSES, FINE SPARKLING WINES THAT SHOW THAT YEASTY AROMA IS NOT ONLY DELICIOUS IN FRESHLY BAKED BREAD, AND WINES WITH THE BEGUILING FRAGRANCES AND TASTES OF RIPE TROPICAL FRUIT.



Fascinating aromas in special wines

The world of wine is unbelievably varied and has much to offer. Special growing and development methods, selection of grape varieties and certain clones, harvesting times and maturing processes produce such wonderful variations as champagne, sweet eiswein, sherry, port and other specialities. These wines enrich the world of aromas with sometimes exotic scents. The yeasty aroma of champagne, for example, is due to the wine being fermented a second time in the bottle on a deposit of yeast. After fermentation, this deposit remains for at least another 15 months in the bottle, giving champagne its yeasty aroma. Some grape varieties develop exotic taste tableaux. The Gewürztraminer and the Italian

Lacrima grape, for instance, are known for their intensive rose bouquet. Muscatel, Huxelrebe and Traminer frequently smell of nutmeg. Using special pure-culture yeast in winemaking, as often employed in the New World, also gives the wine a marked fragrance of exotic fruit. Heavier aromas such as mango and melon tend to develop with increasing age: while Riesling tastes more of apples when drunk young, the aged wine will be augmented by these strong aromas, too. Sweet wines, chief among them port and sherry, are also frequently highly aromatic, evoking memories of raisins and lychees. Fine fragrances such as elderflower, although relatively rare, appear in both red and white wines.

THE SPECIAL AROMAS AND THEIR CORRESPONDING WINES

TYPICAL WINES

GRAPE VARIETIES

AROMA

50 51 52 53 49 54 Rose Yeast Nutmeg Marzipan Eucalyptus Raisins 56 55 57 58 59 60 Elderflower Lychee Melon Blueberry Mirabelle Mango

49	Rose	Aromatic grapes including Muscatel/Gewürz- traminer	Gewürztraminer from South Tyrol or Alsace/ Muscatel from Germany
50	Yeast	Sparkling and still wines with long fermentation on yeast	Muscadet from the Loire / young Alsatian Riesling/ Champagne and sparkling wines
51	Nutmeg	Morio Muskat/Kerner/Portugieser/Gewürz- traminer/Bacchus	Torrontes from Argentina/Huxelrebe from Germany
52	Marzipan	Gewürztraminer/Grauvernatsch/Chenin Blanc	Grauvernatsch from South Tyrol/sweet white wines from the Loire
53	Eucalyptus	Cabernet Sauvignon/Cabernet Franc/Grenache/ Bacchus	Cabernet Sauvignon from South Africa and Australia/Châteauneuf du Pape
54	Raisins	Sherry/Garnacha/Tempranillo/Port	Tempranillo from Spain/sweet German wines such as Beerenauslese/Eiswein
55	Lychee	Sauvignon Blanc/Gewürztraminer/Chenin Blanc	Sauvignon Blanc from New Zealand, Chenin Blanc from South Africa
56	Melon	Huxelrebe/Chardonnay/Pinot Blanc/Gewürz- traminer	Chardonnay from Australia, Chile and California
57	Elderflower	Dornfelder/Sylvaner/Sauvignon Blanc/Sangiovese	Sangiovese from Tuscany/Sylvaner from Franconia
58	Mango	Pinot Gris/Gewürztraminer/Chenin Blanc/Riesling	Mature late Riesling vintages from Germany/ Pinot Gris (Grauer Burgunder) from Baden
59	Blueberry	Merlot/Cabernet Sauvignon/Montepulciano	Merlot from Chile/Rosso Piceno from Italy
60	Mirabelle	Pinot Blanc/Grüner Veltliner/Chardonnay	Lean Chardonnay from Chablis/Grüner Veltliner from Wachau

GRAPE VARIETY

AROMAS

Nebbiolo Cherry/Plum/Mushroom/Smoke/Truffle/Violet/Tobacco Pineapple/Apricot/Banana/Pear/Caramel/Melon/Mirabelle/Peach Pinot Blanc Pinot Gris/Pinot Grigio Pineapple/Apple/Pear/Grapefruit/Mango/Honey/Peach Pinot Noir Raspberry/Smoke/Truffle/Strawberry/Blackberry/Blackcurrant/Fig/Leather/ Violet/Wild berries/Vanilla Banana/Blackberry/Eucalyptus/Plum Pinotage Blackberry/Blueberry/Raisins Primitivo Prosecco Apple/Apricot/Yeast/Lemon Pineapple/Apple/Apricot/Yeast/Mango/Peach/Raisins/Lemon Riesling Banana/Elderflower/Liquorice/Almond/Smoke/Violet Sangiovese Sauvignon Blanc Green pepper/Elderflower/Gooseberry/Lychee Sémillon Honey/Raisins/Gooseberry/Lemon Pear/Elderflower/Caramel/Mint/Smoke/Gooseberry Sylvaner Syrah/Shiraz Blackcurrant/Plum/Pepper/Leather/Plain chocolate/Liquorice/Smoke/Vanilla Tempranillo Plain chocolate/Coffee/Cherry/Pepper/Tobacco/Vanilla Verdelho Pineapple/Pear/Grapefruit Marzipan/Orange/Peach Viognier Zinfandel Blackberry/Plum/Raisins

MAJOR GRAPE VARIETIES AND THEIR TYPICAL AROMAS

The following selection gives you an overview of the major grape varieties and the most common scents found in wines made from them. As wines are a natural product, however, each vintage can exhibit its own nuances in terms of taste and smell. Whereas apple aromas may be dominant one year, a lemon may be more prominent in the next vintage. Therefore the chart below serves only as a guideline and reference, and is not intended to be universally valid. Have fun recognising and learning.

GRAPE VARIETY	AROMAS
Barbera	Cherry/Leather/Plum/Violet
Blaufränkisch/Lemberger	Blackberry/Green pepper/Cherry/Blackcurrant
Cabernet Franc	Eucalyptus/Raspberry//Mint/Pepper/Violet
Cabernet Sauvignon	Eucalyptus/Green pepper/Blueberry/Raspberry/Coffee/Liquorice/Leather/Mint/Mushroom/Cedar/Blackcurrant/Tobacco
Chardonnay	Pineapple/Apple/Banana/Butter/Fig/Grapefruit/Caramel/Melon/Mirabelle/Truffle
Chenin Blanc	Fig/Mango/Marzipan/Lychee
Dornfelder	Blackberry/Butter/Green pepper/Elderflower/Wild berries/Blackcurrant/Vanilla
Gewürztraminer	Honey/Mango/Marzipan/Melon/Nutmeg/Orange/Rose/Lychee/Vanilla
Grenache/Garnacha	Raspberry/Eucalyptus/Liquorice/Raisins
Grüner Veltliner	Mirabelle/Nutmeg/Pepper
Kerner	Apricot/Pear/Nutmeg/Orange
Merlot	Plain chocolate/Butter/Blueberry/Plum/Mushroom/Truffle/Wild berries/Cedar

THE SIXTY AROMAS

WHITE WINE 1 Pineapple 2 Pear 3 Gooseberry 4 Apricot 5 Honey 6 Peach 7 Banana 8 Apple 9 Orange 10 Grapefruit 11 Fig 12 Lemon

WINE FAULTS
Cork

Petrol note
Untypical ageing note

Lactic acid

Onion

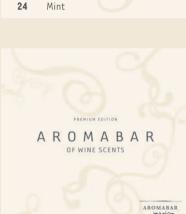
Lovage

Vinegar Glue Horse sweat Sulphur

Green Cauliflower

37

RED WINE 13 Wild berries 14 Strawberry 15 Plum 16 Raspberry 17 Blackcurrant 18 Cherry 19 Blackberry 20 Pepper 21 Violet 22 Almond 23 Green pepper



	CDCCIALITICS
	SPECIALITIES
49	Rose
50	Yeast
51	Nutmeg
52	Marzipan
53	Eucalyptus
54	Raisins
55	Lychee
56	Melon
57	Elderflower
58	Mango
59	Blueberry
60	Mirabelle

OAKED WINE

Plain chocolate

Coffee

Leather

Cedar

Butter Caramel

Truffle

Vanilla

36 Tobacco

Liquorice

33

Mushroom Smoke



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