

# Apples

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## Abstract

The inaugural issue of the journal ‘takes a bite’ into apples with the intent to explore their essence (ουσία [Gk]) and qualities (ποιότητες [Gk]).

## 1 Introduction

Most people know apples — a very popular fruit worldwide. Among hundreds of commercial varieties of apples grown between latitudes 25° and 60° of either hemisphere (Table 1), one wonders what the ‘ideal apple’ might be. Let us explore the *essence* of apples (ουσία [Gk]) resorting to their *quality* (ποιότης [Gk]): what makes an apple? — and for that matter, what makes a *good* apple?

VARIETAL GROUPS	NOTES
<i>Red Delicious</i>	Red skin; origin: <i>Bellflower</i> , M.J. Hiatt, 1864
<i>Golden Delicious</i>	Yellow skin; origin: Virginia, USA, A.H. Mullins
<i>Fuji</i>	Red-green skin; cross between <i>Ralls Janet</i> and <i>Delicious</i>
<i>Gala</i>	Red-green/ -yellow skin; cross between <i>Kidd’s Orange Red</i> and <i>Golden Delicious</i>
<i>Jonagold</i>	Green-yellow skin; cross between <i>Golden Delicious</i> and <i>Jonathan</i>
<i>Granny Smith</i>	Light green skin; origin: French crab-apple seed, Sydney, 19th C.
<i>Reinette</i>	Brown/ bronze skin; origin: Canadian <i>Reinette</i> , by mutation

TABLE 1 Varietal groups accounting for most of global apple production; notes based on Ferreira (1994)

While the essence of apples can be sought analytically into their *qualities*, which can be thought of as ‘characteristics’, ‘attributes’, ‘facets’, or ‘dimensions’ (Aristotle, ca. 350BC), the *holon* (όλον [Gk], whole) of an apple is expected to be more than the sum of its qualities: it must involve the ‘blend’ or combination that brings these qualities together in unique ways (Perdicoulis, 2013a), which we may recognise and group into patterns, types, or varieties.

Essence itself cannot be attributed variations of degree (e.g. ‘more of an apple’), but the graduation of quality is quite natural and well-accepted (Aristotle, ca. 350BC). And while some qualities of apples are not easy to measure (e.g. flavour, aroma), the subject of study is not expected to be sensitive or controversial in a way that could invoke issues of appropriateness in applying measurements (Perdicoúlis, 2013a,c).

## 2 Specifications

An ‘objective’ kind of quality can be established through the identification of the traits, characteristics, properties, parameters, specifications, or attributes of apples (Perdicoúlis, 2013c). Figure 1 presents a hierarchical graph of common qualities of apples, grouped for the convenience of study.

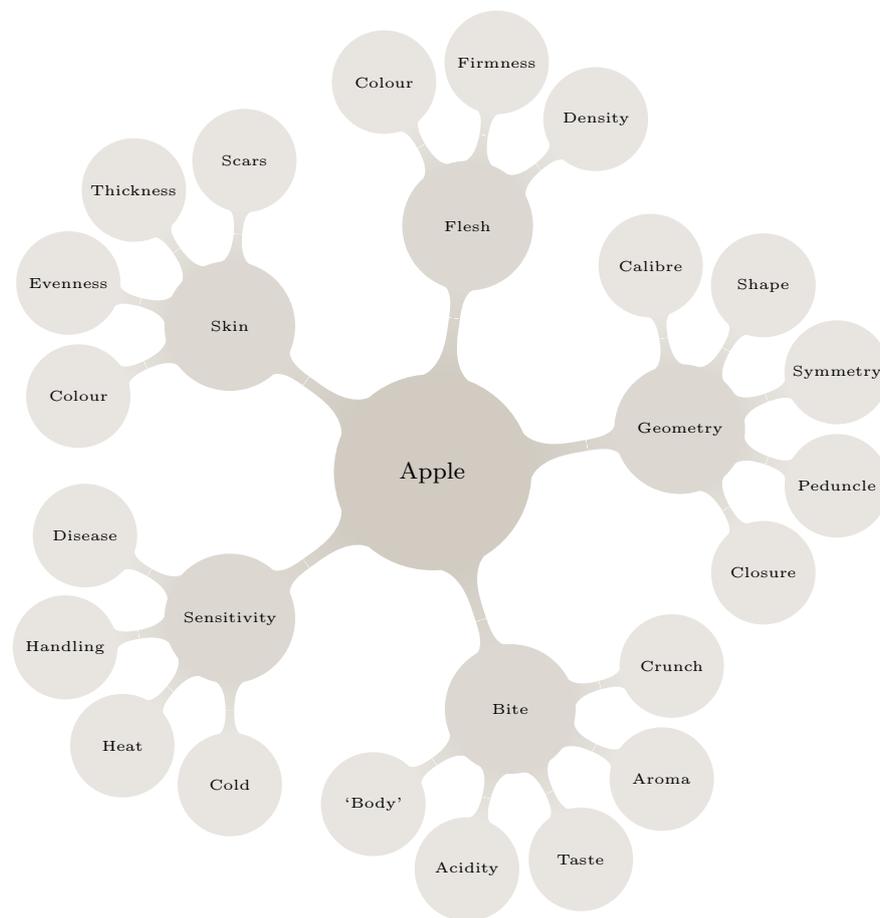


FIGURE 1 Common qualities of apples — perhaps better known to specialists rather than mere consumers

In a more practical or ‘operational’ sense, we may look for a set of qualities that describe apple types succinctly, and also allow for the expression of a ‘degree’ at each quality as in Figure 2. This would give a quick visual identification, or ‘quality profiles’ to varietal groups of apples.

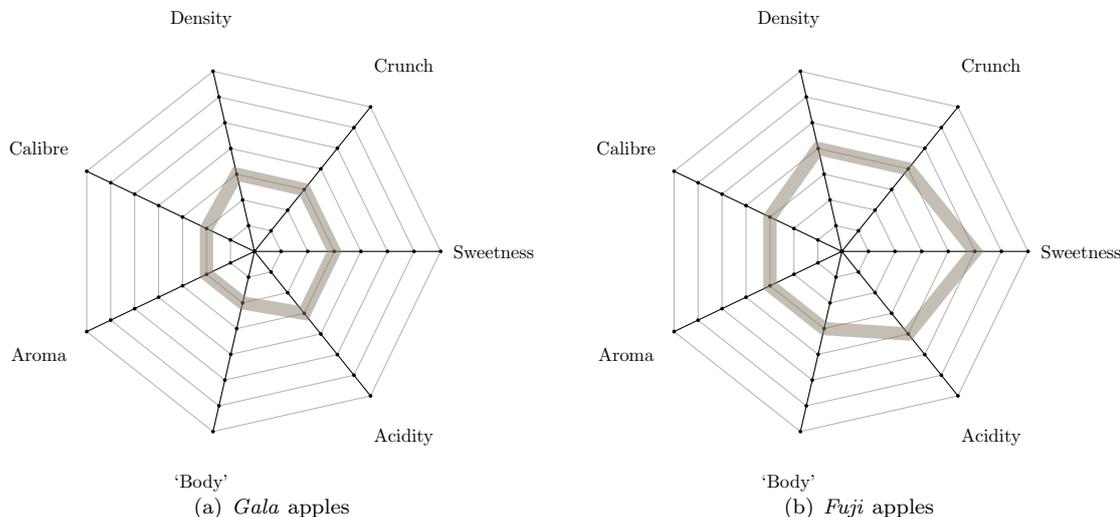


FIGURE 2 The degrees of each quality create different ‘broad-brush profiles’ for each varietal group — and these ‘radar diagrams’ may be applicable to other fruit, too

In addition to ‘quality profiles’ (Figure 2), we should also look for the ‘binding’ that combines the analysed parameters and creates the whole of the essence — i.e. the ‘holon’ (Perdicoulis, 2014). This is probably difficult to be explained, but perhaps easily identified by specialists, experts, or *connoisseurs*<sup>1</sup> at apple-tasting contests — albeit in an esoteric way. In general, apple specialists seek more complex profiles, with well-known patterns of qualities taken together to represent ‘traces’, ‘temperament’ or ‘personality’ — for instance, the ‘subtly perfumed and succulent sweetness’ of *Gala*.

### 3 Goodness

#### 3.1 Product view

An ‘assessed’ kind of quality commonly reflects ‘likes and dislikes’. Assessments always have a *reference* such as a *purpose* or personal preferences of the ‘judge’ — e.g. at an apple-tasting contest, a particular connoisseur, or a common consumer. Seen this way, assessments are exercises of *matching* between qualities and (p)references.

Specialists who have given enough thought to the qualities of apples should know how to interpret the profiles of different types of apples (Figure 2). Hence, for any given purpose, they should easily match the ‘right apple’. For instance, a request for sweet and aromatic apples with significant ‘body’ and low acidity is likely to identify *Fuji* (Figure 2(b)) as a ‘good choice’ — and definitely ‘*the choice*’ when the only other alternative is *Gala* (Figure 2(a)).

#### 3.2 Process view

Seen in a wider perspective, apples exist in three main phases: production, commercialisation (including conditioning, storage, and distribution), and ‘end-use’ (e.g. human consumption as raw

<sup>1</sup>i.e. ‘the ones who know’, or are experienced enough to make fair judgements in the particular subject matter.

fruit, juice, or preserve, as well as animal consumption) — Figure 3.

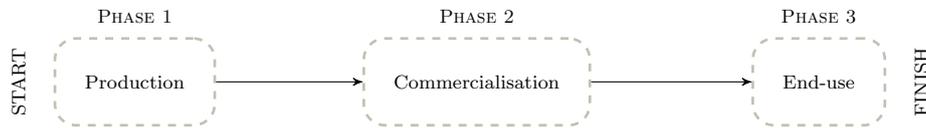


FIGURE 3 Three important phases in the existence of apples, from the orchard to the end-user

In a liberal, non-Aristotelian sense, ‘quality’ often refers to *care in the production and commercialisation* — for instance, a ‘quality apple’ is one that has been cultivated with low amounts of agrochemicals, picked by hand, waxed by hand, packaged in cushioned cartons, transported in cool temperatures, and stored for only a few weeks. While this ‘care’ has an effect on the intended degrees of the ‘market qualities’ of the apples (Figure 2), it also brings out qualities such as low agrochemical traces, which could be added to Figure 1.

A ‘careful’ process usually requires special training, preparation, materials and procedures, all of which make ‘quality’ apples notably expensive — i.e. their creators are able to bank on that quality and make their profit through higher prices and lower sales volumes, as opposed to the ‘high-volume production’ apples. The ‘quality market’ carries on as long as there are people willing to pay extra money for ‘quality products’.

Factors of chance (e.g. weather patterns) are almost always determinant, but essentially care in the production and commercialisation (e.g. storage, transport, and handling) involves *controllable determinant factors* owing to field practices as well as a support framework consisting of science, technology, and market practices — e.g. agricultural engineering, biotechnology, refrigeration. Let us consider an illustration of the effects of the production phase to the final product in the case of the apple variety *Bravo de Esmolfe*, originally from the district of Viseu, Portugal. Apples of this variety have notably evolved over in recent years regarding size, form, and even conservation characteristics as a result of the production: for instance, in traditional culture, the original stock trees were naturally restricted in nutrients, while in modern culture the rootstock is dwarfing and hydro-mineral nutrition is regular — Figure 4.

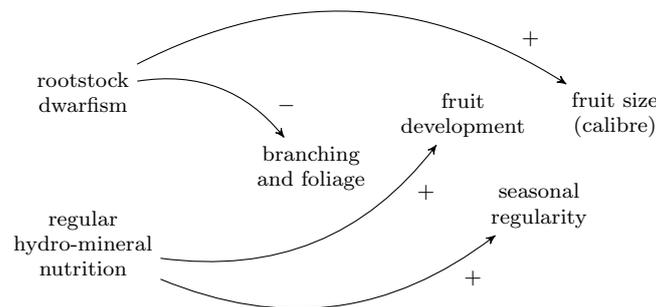


FIGURE 4 Rootstock selection and nutrition regularity influence qualities of the apples (e.g. calibre, development) as well as important production aspects (e.g. inter-annual regularity, tree size)

Besides creating ‘upmarket’ products, the practical implementation of the *process* that brings the apples to the user determines to a large extent the degrees of the qualities presented in Figures 1 and 2. At the production phase, for instance, critical factors for the quality of the apples are the micro-meteorological conditions of the orchard or ‘terroir’, the state of the trees (e.g. age,

nutritional state, fruit load of the current and previous seasons), the day of harvest (e.g. 120 days of development for *Gala* and 200 days for *Fuji*), the hour of harvest, as well as agricultural practices — e.g. fertilisation, irrigation, pruning, weeding (Santos, 1991). At the commercialisation phase, critical factors for the quality of the apples are the conditions of conservation (e.g. duration, temperature, humidity) as well as of transportation — e.g. refrigeration, impacts (Cavalheiro et al., 2000, 2001).

## 4 Knowledge

### 4.1 Experience and reflection

Thorough knowledge of apples requires a close contact at all phases of their existence (Figure 3), so much in scientific study as in personal contact (Kant, 1787). While a ‘bite’ experience makes one get to know what the apple qualities (Figures 1 and 2) mean in practice, knowing *what makes* these qualities — and *how* — is indeed deeper knowledge.

Although first-hand experience provides a rich and close-up perspective, appropriate abstraction gives the necessary remoteness to reflect on an extended range of factors that shape the essence of apples — for instance, the *motives* of the apple producers (e.g. profit or ‘good apples’), the *practices* of the apple producers and merchants (e.g. their ‘care’), and the *know-how* of the users to get the most *benefit* from the apples (Figure 5).

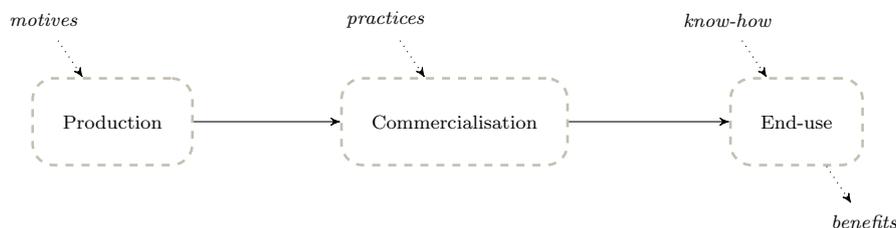


FIGURE 5 Extended range of factors that shape the essence of apples — i.e. ‘what apples are’, as well as ‘what apples (can) do’

### 4.2 Practical issues

The knowledge of apples — at least in their commercial form — helps respond practical questions such as ‘what is a good apple?’ or ‘which apple is the best choice?’ among a variety of options. In an analytic perspective, we are asking to match a pattern of relevant apple qualities at appropriate degrees (§2) to suit a given purpose such as a use, need, or taste (§3). When both the qualities and the purpose are well identified, it should be easy to select an apple by its ‘radar-diagram’ or ‘profile’, which may (or may not) reflect aspects of ‘care’ in the production and commercialisation, directly or indirectly.

Besides their qualities, or intrinsic characteristics, apples also have temporary conditions, or ‘affections’ (Aristotle, ca. 350BC, Part 8) such as the temperature of the apple at the moment of eating — and it is good to keep in mind that the qualities of apples evolve over time (maturation process). Therefore, a ‘good apple’ must have not only a desirable set of *qualities*, but also a desirable set of *conditions* at the *optimum* moment of its end-use.

Finally, the experience of eating an apple — a very common end-use for this kind of fruit — may be also influenced by external factors such as the *mood* of the moment (e.g. good company, joyful conversation), the place and the *ambience* it creates (e.g. at the office, the canteen, or in a stylish restaurant), or the *frequency* at which we eat apples (e.g. only when ‘good apples’ are available, or as a daily dietary supplement).

### 4.3 Expert knowledge

Apple specialists do carry a deep and rich knowledge about apples as end-use products, and often also about their production and commercialisation, which they can apply as consultants and/ or judges. However, in most cases — and for many reasons — this knowledge remains as property of the individual specialist or the group of specialists, and does not find its way to the wider community — or, perhaps, does not get assimilated.

A potential opportunity to learn much about apples are the apple-tasting contests. However, their main function is to promote (a) genuine (agricultural) efforts and the associated products, and/ or (b) innovation such as new and interesting combinations of qualities, which may stimulate the apple market and associated activities (e.g. culinary art, restaurants, preserve industry). Hence, their value as learning grounds is not very enriching.

One very visible outcomes of the apple-tasting contests is the ranking of the assessed varieties — i.e. first prize, second prize, etc. Commercial ventures appear to like ranking, as it adds dynamism to the market — for instance, it promotes or establishes certain products or producers. Consumers also like ranking, as it facilitates their decision-making — for instance, it identifies the most popular apples. In fact, though, ranking actually *un-educates* one’s decision-making capacity: the ‘honest-to-oneself’ or ‘non-conformist’ consumer will not buy what is popular, but what is ‘good’ based on one’s own preferences or intent of use.

### 4.4 Identity and variation

Knowing the quality profile of an apple (e.g. Figure 2(b)) may suffice as a global or scientific description; and experience could help give a physical dimension to these qualities; but still, what gives a *Fuji* or a *Gala* its character? How do we perceive — and how do we describe and communicate — that ‘binding’ or ‘blending’ of qualities into the essence of that apple? This may require sufficient study and practical experience equivalent to that of the apple specialists, plus one more thing: *sharing* of that knowledge in the wider community, so that everyone gets to understand ‘what makes an apple’, and over the years create a culture of understanding and appreciating apples — if this is not a total exaggeration.

The many qualities of apples (Figure 1), as well as the combinations of these qualities (Figure 2), not only provide analytic means to ‘decompose’ apples into their inherent properties, and then classify them conveniently (e.g. cooking apples, dessert apples). The quality analysis also identifies possibilities to ‘design’ new apples according to market trends, fashions, or customer requests. The techniques already exist, and the practice already takes place (Ferreira, 1994; Tromp et al., 2005). This way we could expect apples that may be quite different than the varieties we already know, or from the fruit we know as generically as ‘apple’.

To the extent that the ‘radar diagrams’ of Figure 2 bring up selected qualities of apples, is it possible to tell what really makes a fruit an ‘apple’, and distinguishes that from the fruit of similar species such as pears or nashis<sup>2</sup>? If, for instance, we close our eyes, how could we tell that what we

<sup>2</sup>These are known as ‘Chinese pears’, with an appearance and taste resembling apples.

are eating is indeed an apple and not a nashi? Such questions are not easy to answer, and raise issues of genetic and phenotypic variety with philosophical implications about the continuum or distinctness of variety in nature.

## 5 Coda

To get to know the essence of apples, and to understand what is a well-produced apple — or what is not —, we should think and talk about apples explicitly: make them an object of study, reflection, and culture (Perdicoulis, 2013b). Quality, whether (a) as individual properties (characteristics), technical patterns (profiles), or well-known traces (character) of an end-product, (b) as ‘care’ in its production, or (c) as a ‘match-making’ exercise, is more than a personal issue: it is a cultural issue, to be shared openly and widely.

In the end, we always need find a good apple. And contrary to popular practices, this is not best done by ‘hearsay’ (e.g. popularity or ranking): it is by proper match-making between (a) one’s custom specifications and (b) possible candidates. In the case of apples, this search cannot be limited to the faculty of sight (e.g. the colour and shape), olfaction (e.g. the aroma) or hearing (e.g. comments, rankings): one must *bite* into the apple to explore how it tastes, and one must *know* how this apple came into existence. However, what takes most work is not to find a good apple, but to actually produce it and bring it to its destination (Perdicoulis, 2011, p.142).

### HISTORICAL/ ETYMOLOGICAL NOTE

Apple trees belong to the genus *Malus*. The most common species is *M. domestica*, with the introduction of genes from other species such as *M. floribunda*, *M. robusta*, and *M. zumi* (Ferreira, 1994). An important etymological distinction must be made about the name of the genus *Malus*, to avoid equivocity: the diacritical writing of the correct root is *mālum*, with a long ‘a’, originating from μῆλον [Gk] or μᾶλον (Doric version), which refers to any tree-fruit that is fleshy on the outside and has a kernel inside — as opposed to *nux* [L], nut (Lewis and Short, 1891). This is not to be confused with *mālum*, with a short ‘a’, from μέλας [Gk], black, originally from *mala* [Sanscr.], dirt — *cf.* macula, immaculate [L] — which is related to evil, bad, disaster, and other similar disagreeable conditions (Lewis and Short, 1891).

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