

Is it possible to find a meaningful definition of the term “seasonal food”?

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March 2009

British consumers are being exhorted to eat more seasonal fruit and vegetables. Celebrity chefs (e.g. Hugh F-W), NGOs (e.g. the Soil Association) and government (e.g. Defra) have all suggested that eating food that is “in season” can deliver quality, taste and environmental benefits. But what exactly is “seasonal food” and what does “eating food in season” really mean? Answers to these questions will be important in evaluating the claims that are increasingly made about seasonal food.

In a recent call for research proposals Defra approached the definition of seasonal food as follows:

“Defra’s starting point for the definition of locally in season food is: food that is outdoor grown or produced during the natural growing/production period for the country or region where it is produced. It need not necessarily be consumed locally to where it is grown. This applies to seasonal foods produced both in the UK and overseas.”² (emphasis in the original)

The key elements here are that seasonal food is (a) “outdoor grown” (b) during the “natural growing/production period” (c) in the place it is produced. Importantly, Defra appear to dismiss any link between the place of production and the place of consumption. In other words, if green beans are “outdoor grown” during the “natural growing/production period” in Kenya, and then shipped to and consumed in the UK, they should be considered as “seasonal” produce.

The difficulty lies in Defra’s decision to yoke together the terms “local” and “in season” to coin a new category of food: “locally in season”. Like the term seasonal, the term “local” is also ambiguous.³ Though variously and often imprecisely defined, it is frequently used to imply reduced food miles (and thus reduced environmental impacts from transportation) and greater freshness, as well as more emotive messages around community solidarity.

The approach leaves much to be desired. What does “outdoor grown” mean? Is, for example, the use of seedlings started in heated greenhouses permitted? Is the use of unheated plastic tunnels or plastic mulch compatible with the notion of “outdoor grown”? Further, what should we understand by “the natural growing/production period”? Is it not the case that for many crops the production season has been significantly extended by the breeding of early and/or late maturing varieties? How does such a technology-extended production period that is not dependent on energy inputs for heating relate to the idea of a “the natural growing/production period”? Finally, the Defra definition says nothing about storage, so conceivably an “outdoor grown” apple, produced in New Zealand, kept in controlled atmosphere storage for six months and shipped to the UK, should also be considered as “seasonal”.

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² Terms of reference for research on “Understanding the Environmental Impacts of Consuming Foods that are Produced Locally In Season - FFG 0811”, Defra, March 2009.

³ See e.g. Born, B. and Purcell, M. 2006. Avoiding the Local Trap: Scale and Food Systems in Planning Research. *Journal of Planning Education and Research*, 26:195-207.

The reality is that one of the goals and achievements of international retail supply chains has been to make “local seasonality”, as it moves around the globe, available to retail customers. This isn’t a new ambition – historic examples include the new crop carried from China to the UK by tea clippers, *le Beaujolais nouveau* and truffles – but modern logistics technology has been specifically developed to make “locally in season” goods much more accessible and affordable.

Leaving aside for now the much debated question of what constitutes local, are there other more meaningful ways to think about seasonal food?

There would appear to be three main factors that must be taken into consideration when defining seasonal food:

1. The degree to which the production environment is altered;
2. The seasonal difference between the sites of production and consumption;
3. The form of food.

Agriculture, by its very nature, is about altering the natural environment. Depending on the production system, land is cleared and cultivated, nutrients are added, pests suppressed, irrigation water applied and so on. Some technologies are specifically designed to manipulate the growing season, by increasing the air temperature (e.g. through heated or unheated tunnels) and/or the addition of artificial light. Each system, as a combination of environmental conditions, technology and the genetic potential of a particular crop variety, results in given production and harvest seasons. As agriculture developed over the centuries, the production and harvest seasons of some individual crops changed dramatically.

Seen in this light, the notion of a “natural growing/production period” is highly problematic. However, given the pressing policy priority of reducing carbon emissions in the food chain, it would seem reasonable to conclude that produce from any production system that was dependent on fossil fuels to modify air temperature and/or light levels should not be considered “seasonal”.⁴

In addition to issues around production systems, those who stress the quality, taste and “food culture” aspects of seasonal food are presumably thinking about seasonality within the area of consumption. Here the basic idea is that during any particular period or season you orient your consumption to what is produced in your location (however that is defined). In this sense, the proposition that food imported from half-way around the globe could be considered “seasonal” to somewhere in the UK is clearly untenable. Moreover, from an environmental perspective, the benefits of a “seasonal” approach to consumption may be largely lost through the carbon emissions associated with long-distance transportation.

The final factor that we consider is the form of the food when it is purchased by the consumer: fresh; having been stored; or having been preserved. This addresses the question of whether all “seasonal” food must be “fresh” (consumed shortly after being harvested): are “new” potatoes produced near the point of consumption “seasonal” in the same way as potatoes from the same farm that have spent five months in storage? Our sense is that from an environmental perspective the answer to this question should depend on the type or energy intensity of the storage technology.

⁴ We are leaving open here the question of whether produce from a production system that used renewable energy to modify air temperature and or light levels could be considered “seasonal”.

Similarly, it is difficult to see how preserved or processed foods could ever be “seasonal”.

We summarise these factors in the table below. Our suggestion is that in order to be considered as a “seasonal” food a product must meet the following criteria: Production system = 1, plus Seasonal difference = A, plus Form of consumption = a or b.

Production system
1. Fossil fuels not used to alter air temperature and/or light levels
2. Fossil fuels used to alter air temperature and/or light levels
Seasonal difference between areas of production & consumption
A. None – small
B. Large
Form of consumption⁵
a. Fresh (<10 days post-harvest)
b. Stored 1 (>10 days post-harvest; low energy storage)
c. Stored 2 (>10 days post-harvest; high energy storage)
d. Preserved

In conclusion, we applaud Defra for attempting to pin down a notion that lies at the heart of contestation amid the commercial imperatives of contemporary food supply chains, consumer expectations of the food supply, and the need to reduce food chain GHG emissions. The use, by government, NGOs, the food industry and food consumers, of emotive but imprecisely defined terms such as “local” and “seasonal” obscures the issues underlying this conflict, and clearer definitions are urgently needed. However, the definition offered of “locally in season food”, by harnessing ideas which are both inherently ambiguous and mutually contradictory, is of limited value in this regard.

⁵ The <10- and >10-day limits are entirely arbitrary and for illustration purposes only.