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Future of sustainable eating? Examining the potential for expanding bean eating in a meat-eating culture

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ARTICLE INFO

Article history:

Received 1 December 2013

Received in revised form 2 June 2015

Accepted 9 March 2016

Available online xxx

Keywords:

Beans

Plant protein

Meanings

Consumption

Intentions

Attitudes

Food culture

ABSTRACT

A transition towards more sustainable food consumption requires changes in everyday eating patterns, particularly a substitution of animal protein with plant-based protein sources. However, in many European countries plant protein consumption is low compared to meat consumption. The article explores plant protein consumption frequencies, future intentions to increase bean consumption, and the associations of frequent bean eating with socioeconomic factors and bean-related meanings, material issues and competence. A population web-based survey was conducted in 2013 among 15–64-year-old Finns ($n = 1048$). The results showed that beans and soy-based plant proteins were infrequently consumed. A fifth of the respondents intended to increase their bean consumption in the future, intention being the greatest among those who already included beans in their diets. Frequent bean consumption was most likely among persons aged 25–34, living around the capital district, with education higher than comprehensive or vocational school, and who were vegetarian. Perceiving beans as culturally acceptable and good-tasting, and having competence in preparing bean meals were positively associated with the frequent eating of beans. The results suggest that for plant proteins to replace meat, new meanings and competences related to preparing and eating pulse-based dishes are needed. Based on our results, we build alternative future scenarios for plant protein consumption and the related requirements for changes. Several actor groups, such as NGOs, politicians, celebrity chefs and teachers of home economics have a central role in the developments.

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1. Introduction

1.1. Background—current and future consumption of proteins in western food cultures

In Western food cultures and meals, meat holds a central place (Fiddes, 1991). Its consumption has steadily increased during the past decades (Anonymous, 2013; Vinnari & Tapio, 2009), whereas that of plant proteins has been stable (de Boer, Helms, & Aiking, 2006). Although in Western Europe the consumption of meat is not expected to increase much (de Boer et al., 2006), it has been forecasted that the worldwide demand for animal products will grow significantly in the coming decades, and that the global production of meat will more than double between 1999 and 2050 (Steinfeld et al., 2006).

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<http://dx.doi.org/10.1016/j.futures.2016.03.006>

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In Finland meat consumption has increased ever since the 1950s, and has now reached 77.5 kg per capita per year (Anonymous, 2013). Meat holds a central place in Finnish meals and food purchases (Vinnari, Mustonen, & Räsänen, 2010), as is the case in other Nordic countries, too. In the late 1990s around 60% of hot meals eaten by Finns included a meat “centre”, compared to the 8–13% of hot meals with a vegetable centre (Mäkelä, Kjaernes, & Pipping Ekström, 2001). Since meat has a high status in Western cultures, social and cultural forces opposing a change from meat to plant proteins are strong (de Boer, 2006a).

Whereas tofu was unfamiliar in Western diets until the mid-1970s (Shurtleff & Aoyagi, 2013), beans have been a part of European diets for centuries (Cubero, 2011). On the whole, however, human consumption of pulses in European Union countries has been low compared to countries in such as Burundi, India, Nicaragua and Lebanon, where pulses are a central part of the diet (Schneider, 2002).

In Finland, broad beans (or fava beans) have been cultivated since the 15th century and they were commonly used in dishes such as bean soup. In the 1960s and 1970s the cultivation nearly ended due to, e.g., the late maturing of the imported varieties in Finnish farming conditions and the low price of imported soybean protein (Stoddard & Hämäläinen, 2011). Apart from broad beans, other beans or lentils have not been a part of the traditional Finnish cuisine or mainstream food culture either. Recently, however, public and media interest in cuisines and dishes from other parts of the world have probably somewhat affected the consumption of plant proteins. In addition to broad beans, peas have been cultivated and eaten in Finland for centuries and they are still currently used as a side dish or as an ingredient in pea soup, which is an old and traditional dish.

For some time already there has been a growing concern about the negative impact of the herding, slaughtering and eating of animals on the environment, animal welfare and human health. Studies have shown that substituting plant proteins for meat is beneficial both from an environmental (Carlsson-Kanyama & González, 2009; Godfray et al., 2010; Pimentel & Pimentel, 2003; Virtanen et al., 2011) and health perspective (Nordic Nutrition Recommendations, 2014; World Cancer Research Fund, 2013). For example, vegetable-based meals have lower CO₂ emissions compared to meat-based meals (Virtanen et al., 2011), and high consumption of red meat and processed meat has been associated with cancer risk, whereas pulses have several positive health effects (Nordic Nutrition Recommendations, 2014; World Cancer Research Fund, 2013).

The growing concern for the negative consequences of meat consumption has not thus far been reflected in the proportion of vegetarians, which has remained steadily at 2–4% among Finns since the mid-1980s (Helldan, Helakorpi, Virtanen, & Uutela, 2013; Vinnari, Montonen, Härkänen, & Männistö, 2008; Paturi, Tapanainen, Reinivuo, & Pietiläinen, 2008). Moreover, in 2007 only 2–4% of the daily intake of protein was gained from vegetables and vegetable dishes, compared to 29–34% from meat dishes, 25% from cereal and bakery products, and 23% from milk and dairy products (Paturi et al., 2008).

A study on expert views of future meat consumption in Finland suggested potential factors that may reduce meat consumption in the future. These included, e.g., the increasing number of vegetarians, the positive image development and the increasing acceptance of meat alternatives, the better knowledge about preparing vegetarian meals, the development of novel protein sources, the decreasing price of alternatives to meat products, and the decreasing meaning of meat as a status food and increasing importance of health issues to humans (Vinnari, 2008). In another study, future scenarios of consumption for the year 2030 included an eco-efficiency scenario where meat is very expensive due to a limited quantity of production, and consequently, it is often replaced by protein substitutes (Vinnari & Tapio, 2009). In a sufficiency scenario, the balancing between physical needs, hedonist pleasure, and animal welfare, has led to meat being consumed only at special occasions.

1.2. Cultural and socio-economic factors influencing the consumption of plant protein

In order to understand current and future consumption of proteins, it is vital to understand the associations of consumption and other factors, such as attitudes and socioeconomic background. Several studies have investigated the reasons to eat or not to eat plant proteins. Among Canadians, tastiness and healthiness were the most frequently mentioned reasons for eating pulses, whereas long preparation time and inconvenience, not knowing how to cook pulse dishes and not liking pulses, were the most frequently mentioned reasons for not eating pulses (IPSOS, 2010). The U.S. study showed that the major barrier for soy consumption was lack of knowledge on how to use it, and nearly a half of the respondents considered that soy products were not readily available and that their flavour or texture was not appealing (Wenrich & Cason, 2004). A qualitative study revealed that taste preferences, cost and convenience factors were significant barriers to soy consumption, and that the health benefits of soy were not enough to inspire changes in food choices (Schwyver & Smith, 2005). The greatest barrier to soy consumption was its largely unfavourable image, for example, tofu was described as “yucky” or “weird” and soy products were considered as a substitute for animal protein or dairy products that vegetarians or those with allergies were forced to eat (Schwyver & Smith, 2005). The cultural background of liking of soy is exemplified in a study comparing French and Vietnamese consumers, showing that in France soy was not seen as a pleasurable product, whereas in Vietnam it was a product of memories, emotion and pleasure (Tu, Husson, Sutan, Ha, & Valentin, 2012). A Finnish study focusing on the future of meat showed that both consumers and experts regarded laboratory grown artificial meat as very undesirable or improbable (Vinnari & Tapio, 2009).

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