Consumer Preferences, Experience and Credence Issues and Their Strategic Implications for French and US Fresh Produce Sectors **Draft Paper (28/04/00)**

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Introduction

This paper examines consumer preferences and their effects on marketing within one segment of the food industry -- fresh fruits and vegetables. As will be elaborated, firms and supply chains in the fresh produce sector face three factors that complicate their abilities to develop strategies that instill consumer confidence and assure consumer satisfaction. They are (1) the critical importance of experience product attributes and related limitations of using brand names with fresh produce, (2) the increasing relevence in both the U. S. and French food sectors of credence product attributes, and (3) the relative importance in fresh produce markets (vis a vis other food sectors) of the collective goods associated with marketing strategies (Moreau and Roty).

The literature typically addresses the issues of consumer confidence and consumer satisfaction in terms of a generic private/public sector dichotomy, in which potential market clearing solutions are proposed and analyzed in terms of private sector strategies, public sector actions and/or some combination of both. For example, Baker lists stricter production standards, improved regulatory monitoring and government-defined labels as potential government policy options. He lists grower labels, retailer labels and third party labels as private industry options.

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Others examine the complementarity of private and public strategies. For example, several researchers have looked at how government monitoring assures credibility and consumer confidence in private sector market signals (Northern and Henson, Baines and Davis, Unnevehr, et al., and Valceschini).

However, this literature has several limitations, including 1) little work that has looked at the full complexity of the specific market conditons of fresh produce, 2) an "instrument classification" (i.e., the private/public dichotomy) which specifies strategies in terms of "agents" responsible for implementing the strategies and not in terms of the characteristics of the strategies themselves, and 3) little recognition of the importance of public goods associated with fresh produce marketing strategies. Within the context of these shortcomings, this paper addresses the following research question, "In the specific case of fresh fruits and vegetables, how do different marketing strategies affect consumer confidence and consumer satisfaction?"

The paper presents a framework to analyze this question and explores how a set of proposed instrument classifications can be used to generate new hypotheses about the origin and dynamics of consumer confidence and consumer satisfaction. Although this is a conceptual paper and not an empirical study of the research question, examples and anecdotal evidence from the U.S. and French fresh produce sectors are used to complement the work.

Conceptual Framework Linking "Instruments" and "Outcomes"

The framework of this paper follows a cause and effect flow similar to that of a production function -- selected "instruments" act as "determinants" of selected "outcomes" (where instruments are marketing strategies, and outcomes are consumer confidence and satisfaction). While controlling for other contributing causal factors, the analysis compares how the instuments under consideration affect these outcomes.

Four classifications of instruments are considered: product-specific strategies, product-general strategies, producer-exclusive strategies and producer-inclusive strategies. The first pair of classifications (product-specific vs. product-general) differentiates between strategies that bind a market signal to the retail product and those that communicate market signals via other means (e.g., persons or places). The second pair of classifications (producer-exclusive vs. producer-inclusive) differentiates between (1) strategies based on exclusive collective actions of supply chain participants which seek to reduce the number of strategy participants with proprietary market signals and differentiated retail products and (2) strategies based on inclusive collective actions within a supply chain which seek to increase the number of strategy participants and can ultimately lead to standardization of retail products.

The distinction between producer exclusive/inclusive strategies in terms of the type of collective action is based on work by Olson. As he notes, collective action involves group actions and collective goods. With exclusive groups, the collective "good" is the reputation of the brand, store or seller, and the price premium that potentially can be demanded by the exclusive group. Thus, the goal is to limit the number of supply chain participants who can claim the benefits of the collective action. With inclusive groups, the collective good is the reputation of a label, certificate or public regulation, with the goal of increasing the number of participants adopting the strategy since within some range of adoption, there are increasing returns (i.e., as the number of supply chain participants that become involved in the collective action increases, so do the returns to that action).[2,3]

[2] In the long term, such returns may vanish if either strategies are generalized and eventually are included in regulation (e.g., the recent USDA issuance of standards for organic labels), or they lose relevency (e.g., as is the case in poultry in France where the "label rouge", an inclusive strategy, has been combined with more market relevant exclusive strategies; see Sylvander for specifics of this case). However, even if the individual returns to a collective action are lost (e.g., firms can no longer charge a price premium since all firms are now required to adopt the inclusive strategy), collective returns remain (e.g., greater consumer confidence in the product).

The two pairs of instrument classifications also avoid the fallacy that there is an either/or choice between private and public sector alternatives. The "state" always is involved in the market, only its role differs. For example, when Baker suggests that private sector solutions can include a grower, retailer or third party label, the state still has an important role in the protection of property rights (i.e., preventing others from using a proprietary brand name or label). Alternatively, the state can design and/or enforce specific rules governing fresh produce markets, either in the form of government certification programs or by contracting out certification programs to other parties. These examples are not exhaustive but are given to show that both the private and public sector always have roles in the implementation of marketing strategies.

Search, Experience and Credence Attributes of Fresh Produce:

Triole, Nelson, and Darby and Karni have presented a useful typology of product attributes which capture the consumer's perspective.

Search Attributes are known at the time of purchase. Foremost is the price; others are related to the general external "quality" and "condition" of the produce, in terms of firmness, size, shape, color, scent/smell, freedom from blemishes, cuts and external bruising, and in some cases, variety.

Experience Attributes are not realized until the point of preparation and consumption. They include such attributes as taste, crispness, freshness, ripeness and moisture content/juiciness.

Credence Attributes cannot be discerned directly by consumers and include the following types of attributes: sanitary (e.g., the absence of chemical or pesticide residue, or harmful pathogens), health (e.g., vitamin and fat content, presence of anticarcigens, "pharmaculture" attributes), environmental (e.g., growing conditions and techniques that are "green", sustainable, or "eco-friendly"), geographic affinity (e.g., a preference for locally grown produce, or the use of origin as a signal of quality), religious (e.g., kosher foods), and social affinity (e.g., respect for labor standards, preservation of "small" producers, local employment and rural lifestyle, or "fair trade" considerations).

With the four classes of strategy instruments as "determinants", two outcomes are considered in this paper: consumer confidence

[3] Another "collective good" is the "definition" of a market signal. For example, grower groups may attempt to define the specifications of a market signal as a form of bargaining power vis a vis the market power of large retailers.

and consumer satisfaction. Consumer confidence is defined as the trust consumers have in the credibility of claims sellers make about credence attributes. Consumer satisfaction is defined, albeit narrowly, as the degree to which purchased products meet expectations for experience attributes (see text box for definitions of experience and credence attributes).[4]

Consumer confidence and satisfaction are determined by more than the set of proposed strategy instruments. Other causal factors that are in the left-hand-side of this analysis' stylized production function include the size and market volume of a producer, retailer or supply chain, differences in consumer profiles, the preferences most important to a given subset of consumer types (i.e., different consumers will place different levels of importance on each of the attributes listed in the text box), the physiological characteristics of a particular fruit or vegetable, and/or institutional credibility (i.e., who do consumers trust).[5] However, this analysis assumes that these factors are "held constant" in the sense that comparisons of outcomes resulting from each of the four proposed strategies are based on the assumption that all these other possible determinants are the same, and only the strategies differ.

It is also important to note that the two "ultimate" outcomes are qualitatively different. With consumer satisfaction, consumers can know at the point of consumption if the fresh produce has the desired experience attributes. If the fresh produce does not, then the consumer can immediately alter his/her next purchase decision. The lag between discovery/assessment of performance and its effect on consumer decisions is just one purchase.

With consumer confidence, this lag can be much longer. The consumer may not alter purchase decisions for years, even if the produce being purchased does not have the desired

[4] For purposes of simplicity, search attributes are taken as given and are held constant. Recognizing that price and other search attributes are fundamental signals for most consumer purchases, this paper focuses on experience and credence attributes and their influence on consumer confidence and satisfaction.

credence attributes. Even though a consumer may perceive that a product has the desired credence attributes, this may or may not be empirically true.[6] Discovery is costly to the individual consumer, and so it usually occurs through exogenous events like high profile news events (e.g., the alar scare in the U.S. apple market), product recalls or public health alerts.

In other words, consumer satisfaction and confidence are a function of consumer education, which develops differently for the two types of attributes – for the former, it is with each purchase, with the latter, it is over time and can be shaped by a wide range of events and strategies, many which are exogenous to fresh produce markets.

Consumer satisfaction and confidence should be considered separately also because consumers must make trade-offs between these two outcomes. The optimal solution for delivering experience attributes (i.e., maximizing consumer satisfaction) will almost never be the optimal solution for delivering credence attributes (i.e., maximizing consumer confidence). But local optima are possible, and consumers may make conditional purchases. For example, some consumers may have a conditional requirement for a credence attribute that is addressed when the government provides a market signal for it (e.g., a seal certifying a product as being organic). This signal functions as a preliminary requirement before the consumer considers the purchase of the fresh produce, and when met, the purchase decision is along different lines of experience and other credence attributes (e.g., flavorness, freshness, products which are fair traded).

Fresh Fruits and Vegetables -- Specific Issues for Generating Outcomes and Choosing Instruments

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[5] This is an extension of Lancaster's approach in which he asserts that other search attributes besides price are important to consumers. In this case, other search attributes, as well as experience and credence attributes affect purchase decisions.

[6] The determination of what is "true" is multi-dimensional. Firms may have asymetric information about the specifics of a product's experience or credence attributes, but will not share this information with consumers. Alternatively, some "truths" are a function of the subjective perceptions of consumers. A third possibility is that the current state of scientific knowledge cannot answer particular questions about assessing and/or managing the risks of a particular credence attribute (e.g., what is "safe"). Here, only the first diminsion is considered.

Fresh fruits and vegetables present a unique set of challenges to firms and supply chains wanting to instill consumer confidence and assure consumer satisfaction. Foremost among these challenges is the lack of product consistency in fresh produce and its implications for assurring consumer satisfaction. Since fresh produce is perishable, some of its characteristics cannot be maintained at a constant level over time (e.g., moisture content, firmness and flavor), and fresh produce more or less quickly deteriorates into a non-edible and potentially even dangerous food. There also is considerable variability in the production of fresh produce. For example, as Zulauf and Sporleder note in their review of the scientific literature related to the nutrient content of selected fresh produce, "the nutritive composition of apples, oranges, potatoes, and tomatoes varies, depending on climate, geographic location, cultivar, soil variables, irrigation practices, fertilization practices, seasonal and annual factors (p.135)." Although these same sources of variability exist in all food sectors, other sectors have the capacity through processing to blend inputs and level out these inconsistencies in raw products. Fresh produce, being consumed with little post-harvest processing, does not have this flexibility.

This lack of consistency undermines strategies to assure consumer satisfaction. For example, in many food sectors firms use brand names to signal that products sold under the brand name have specific attributes *every time the product is purchased and consumed*. Thus, firms develop proprietary brand names because they want consumers to use the brand name as a proxy for other product attributes. And consumers often are willing to pay a price premium for branded products because the brand name, acting as a proxy, reduces their search costs. But a branding strategy pre-supposes that a firm can deliver a consistent product. It is virtually impossible to build brand loyalty without it. But the nature of fresh produce (i.e., its perishability, variability and lack of post-harvest processing) makes a branding strategy (i.e., the delivery of a product with consistent experience attributes) very expensive. Hence, branding is an imperfect marketing strategy for assuring consumer satisfaction.[7]

Fresh produce markets also face wide ranging differences in consumer preferences for fresh fruits and vegetables (Codron). For example, consumers differ in their willingness to make trade-offs across attributes, and in their perceptions of which products have which attributes. This heterogeniety of demand also poses barriers to firms wanting to develop strategies (such as branding) that depend upon the supply of homogeneous fresh produce.

Fresh produce also poses challenges for firms wanting to instill consumer confidence. MacLaughin notes that fresh produce departments are increasingly important to the overall marketing strategies of grocery retailers. As fresh produce becomes more closely associated with a store's overall reputation with consumers, so does the store's credibility. Retailers strive to create an image that their stores are the "best" choice for consumers. As fresh produce becomes much more central to this overall strategy, the credibility of this claim increasingly hinges on consistently stocking "good" fresh produce. But fresh produce's inconsistency increases the costs of these general marketing strategies, and more importantly, increases the risks of losing consumer confidence in the retailer's broad claims about why their store should be the preferred choice of consumers.

Four Classifications of Strategies

Two pairs of instrument classifications are proposed earlier in the paper. Given these classifications and the specific constraints of fresh produce discussed in the previous section, the following analysis examines how different strategies affect consumer confidence and satisfaction.

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[7] Some firms do pursue branded fresh produce (e.g., Dole, Chiquita, Delmonte) but they also sell processed goods which help build brand recognition, control significant market share in their respective markets, and often brand types of fresh produce like bananas that are both relatively less perishable and have production systems that are technically well controlled.

Specifically, the two pairs of classifications are combined into a 2 x 2 matrix, resulting in four types of general strategies available to firms and supply chains. Each of these four strategies are now discussed and then summarized in Table 1.

Product-specific, producer-exclusive: This type of strategy is best exemplified by proprietary brand names bound to the purchased product. To be successful in instilling consumer confidence and satisfaction, firms or supply chains must use a combination of advertising, promotion and the repeated delivery of product with a consistent quality to build confidence and guarantee satisfaction among consumers. When this strategy is successfully implemented, consumers associate the brand name with a product in a way that the two are synonomous. Brand names are also, by definition, proprietary, and "ownership" of the product name is asserted (and legally protected). In this way, the majority of market "rents" (e.g., price premiums) accure to the firm or supply chain that has made the investments in this type of exclusive collective good.

Despite the limitations of branding fresh produce already discussed, there are some firms and supply chains that are currently pursuing product-specific, producer-exclusive strategies in fresh fruits and vegetable markets. These include grower groups, wholesalers/assemblers and retailers. For example, Perlim apples in France and Ocean Spray cranberries (and other fruits) in the U.S. are grower groups who have developed these brand names. Similarly, Dole is an international assembler/processor of fruits and vegetables that markets fresh produce with the "Dole" name. And in France, several large grocery/home products retailers like Carrefour and Auchan have developed extensive supply chain relationships ("*filières*") with growers and assemblers in order to market retailer-branded fresh produce using the retail store names (e.g., "filière Qualité Carrefour).

In France, these strategies have had mixed results. In the 1980s, some firms developed brand-based strategies for fresh produce that attempted to assure consumer satisfaction, but these proved to be costly and risky, and therefore never significantly developed. In the late 1990s, brand-based strategies for creating consumer confidence (first for sanitary and now also environmental credence attributes) have been developed and seem to be more successful.

These strategies were first developed in fresh meats, largely as a response to the mad cow disease crisis, and have since been extended both to other product lines (e.g., fresh produce) and to cover a broader set of product attributes (e.g., assurances of "quality" and "flavorfulness"). This suggests that there may be both economies of scale (extending the strategies to more product lines) and scope (offering both credence and experience attributes). with these strategies. However, the empirical question remains as to how sustainable these strategies are. As already discussed, brand strategies are difficult to sustain with fresh produce. There also are issues related to asymetries of information, moral hazards and adverse selection which create at least the possibility of opportunistic behavior by firms when implementing these strategies.

Product-specific, producer-inclusive: "Third party" labeling and seal of approval programs best exemplify this type of strategy. By definition, product-specifice market signals (i.e., some type of label or certificate on the product itself) are still necessary for these strategies to be implemented, but these signals are part of an inclusive collective action. Any firm or supply chain that meets the specified requirements of the labeling program is eligible to use the market signal on its products. These strategies can be organized within an industry, by watch-dog groups or through government action.

These strategies are growing in use in both the U.S. and France. For example, there currently are approximately 45 "certified organic" programs in the U.S., while in France, a 1997 survey found that 10% of all fruit orchards were participating in these types of strategies (Hassan and Monier-Dilhan). These french strategies are a diverse set of "signes officiels de qualité", including AB labels (offering assurances about consumer health), AOC labels (offering assurances about both geographic origin and some aspects of taste or flavor), Label Rouge (offering assurances about some aspects of taste or flavor), and Certificat de Conformité (offering assurances about both taste and consumer health). These programs differ considerably in content and intent, but all of these labeling strategies share two characteristics highlighted in this paper: they are product-specific and producer-inclusive.

Many of these strategies have been implemented to foster consumer confidence. By certifying the credibility of claims firms or supply chains are making about the credence attributes of their products, these labeling programs can help consumers with their purchasing decisions since they reduce both search costs and the uncertainty about a product's credence attributes (e.g., the AB label in France certifies that any produce sold with this label has been grown free of chemical/synthetic inputs). However, as the number and types of these labels have proliferated (along with a range of brands and other producer-exclusive market strategies that also use product-specific market signals), the effectiveness of any particular signal in creating consumer confidence is threatened. Consumers may become confused as to which label signals which credence attribute.[8]

Also, these strategies may or may not address specific experience attributes of labeled produce, even though consumers may perceive that a given label signals a certain level of experience attributes (e.g., an AOC label might only certify geographic origin, yet consumers may associate "freshness" or "flavorfulness" with the AOC label, even though no controls over these experience attributes are a part of the labeling program). And since any grower that follows the prescribed procedures/practices may use these labels, variability in the levels of experience

[8] For example, see Baines and Davis who discuss how a proliferation of food retailer and farm assurance schemes in the U.K. resulted in the industry, the supply chain and consumers being confused as to what was being assured and by whom. Also, see Teisl, et al. who suggest that "the proliferation of voluntary ecolabeling programs may actually increase consumer confusion and erode consumer confidence…(p. 1070)."

attributes are likely, which may send mixed and confusing messages to consumers, thus eroding the label's credibility and reducing consumer confidence.

Product-general, producer-exclusive: Various types of vertical coordination within a supply chain best exemplify these strategies, including single supplier contracts, long-term buyer-seller relationships, and farmer markets where growers sell directly to consumers. By definition, these strategies are intended to get consumers to associate desired experience or credence attributes with a particular place or person, and not with a product-specific brand name or label. These strategies are exclusive in design in that transactions (and any related benefits) are specifically between the parties who are bound by a contract or relationship.

These strategies are intended to create consumer confidence via a relationship between the consumer and the seller, but since the signal is not product-specific, this confidence relies on the quality and trust the consumer has in the person/firm/supply chain delivering the product. Similarly, consumer satisfaction can only be created and sustained through the maintenance of this relationship. Should the seller fail to provide produce which meets the consumer expectations for specific experience attributes, the relationship will be threatened. Hence, these types of strategies rely on investments in the seller's reputation and inter-personal trust, and are not product-specific.

In France, these strategies seem to instill confidence and assure satisfaction with consumers. For example, Rogge reports that 50% of surveyed French consumers prefer to shop in small open-air markets (a type of direct marketing common in France), suggesting that these markets are effective in meeting consumers' needs for experience and/or credence attributes.[9]

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[9] However, these same repondents indicated that only about 25% of their total fresh produce purchases were done in these markets. Rogge suggests that the difference is largely due to issues of convenience and time constraints faced by consumers.

Some large French retailers also pursue these types of strategies in combination with other strategies. For example, Carrefour sells both fresh produce with the "filière Qualité Carrefour" label (a product-specific, producer-exclusive strategy) as well as non-labeled fresh produce which has been grown under contracts between Carrefour and its upstream supply chain participants (a product-general, producer-exclusive strategy). In fact the product-general strategy dominates in this retailer's fresh produce department, largely because it is cheaper and less risky for the retailer in terms of assuring consumer satisfaction (due to fresh produce's perishability and variability).[10]

Product-general, producer-inclusive: Adoption of voluntary industry standards and government regulations exemplify these strategies. Examples of these strategies include industry-wide mandates to adopt system-bound practices like HACCP or ISO certification programs.[11] Alternatively, they may be based on government programs that set minimum performance standards for an industry, such as the recent USDA-issued specifications for organic food labeling. These strategies are inclusive since they potentially involve all producers/growers of an industry.[12]

These strategies create consumer confidence in the overall industry and its ability to supply a "safe" or "environmentally sound" food supply. They can also lead to consumer satisfaction if these strategies address minimum "quality standards" for an industry. However, consumers may not "trust" in the government's oversight ability or an industry's willingness to self-enforce adopted strategies, while third party enforcement may not be recognized, let alone trusted, by

[10] Since these fresh produce do not have the Carrefour name on them, in the form of a label, the retailer is not as strongly linked to the product at the point of consumption, thus reducing its risk.
[11] ISO certification is classified here as inclusive because any firm can apply for this certification. The authors recognize that firms can have different processes/end product attributes (i.e., pursue different exclusive strategies within the general bounds of the inclusive ISO certification.
[12] Recognizing that adoption of HACCP or similar programs can be costly, these strategies are "inclusive" only in the sense that any firm *with adequate resources* can participate. Several writers have noted that small producers may be forced out of an industry because they cannot pay the costs of implementing a HACCP program (Caswell, Unnevehr).

consumers. And since no "at retail" product-specific signals are involved, consumers may not know about an industry's efforts to assure "food safety" and/or "quality". Also, these strategies, because they are inclusive and industry-wide in scope, do not address the inherent variability that is naturally occurring in fresh produce. Without assurances of consistent delivery of experience attributes, these strategies can be undermined by the poor performance of some producers/growers in terms of their ability to deliver fresh produce with the desired experience attributes.

Interaction of Strategies and Issues of Public Goods

These four types of strategies are highly inter-dependent and can be either complementary or contradictary. As has been noted already, firms and supply chains can and do adopt a combination of strategies to create and sustain consumer confidence and satisfaction. However, competition between different strategies may debase overall consumer confidence in the total supply of fresh produce (a public good shared by all market participants). For example, if a particular firm extols that its brand of fresh produce is "safe", the implicit message is that all other produce is somehow not safe. To prevent this, an industry or supply chain may adopt an inclusive strategy for the collective control or retention of information in order to keep or to gain consumer confidence (Barzel). Thus, there is a "jointness" in product reputation that is shared by all industry participants.

There are also potential problems when too many strategies are adopted within an industry. Consumers have a limited capacity to identify and learn about market signals. Too many signals arising from multiple strategies can dilute the effectiveness of any individual signal, especially if consumers have a difficult time identifying which signals assure which credence and experience attributes. The analogy from Olson is his example of a highway, a type of inclusive collective good. Too many cars on the highway will cause a traffic jam and temporarily suspend the provision of the good. Like too many cars on the road, too many signals (brands, labels, certificates, and programs) can "jam" the market.

Free rider problems also exist. For example, a firm may free ride on the stock of public good provision by ambiguously using a credence collective action or pubic image without themselves providing the expected attributes. Alternatively, a firm may, in an exclusive strategy, specify a market signal differently than a similar producer-inclusive signal already in existence. Such was the case with "fair trade" environmental Chiquita Rainforest Alliance certified labels vis a vis European fair trade labels. Social conditions (e.g., fair labor wages, child labor control) are a decisive component of European fair trade labels but these factors were largely absent in Chiquita's program (Murray and Raynolds).

In short, there is a need for minimal agreement within a supply chain that leads its participants to integrate strategies that emerge from inclusive collective action. Conversely, too much consensus at the national or international level may reduce individual incentives for firms to innovate and provide new solutions (in the form of exclusive strategies) which are designed to address the challenges of instilling consumer confidence and assuring consumer satisfaction.

Concluding Remarks

The implications of this analysis include the following:

- ♦ Strategies for instilling consumer confidence and consumer satisfaction can be considered in terms of either product-specific or product-general strategies. Strategies can also be classified in terms of either producer-exclusive or producer-inclusive collective actions.

- ♦ Product-specific, producer-exclusive stategies (e.g., brands) are difficult and risky in fresh produce because of the inconsistency inherent in fresh produce. Hence as stand-alone strategies, they may not adequately assure desired market outcomes (in terms of consumer confidence and satisfaction). However, because these strategies, by definition, limit the number of potential strategy participants, any market "rents" (e.g., in terms of price premiums) are captured by a single or small number of supply chain participants.

- Product-specific, producer-inclusive strategies (e.g., third-party quality assurance labels) may provide a broad-based market signal for desired credence and experience attributes, but these signals face collective action constraints. Initially, there is a need for a critical mass to adopt the signal before it can be an effective signal to consumers. And although this suggests that there are increasing returns to implementing the strategy (as more firms adopt the strategy, the potential returns to the strategy increase), these returns can become diffused when all, or nearly all, firms adopt the strategy or the strategy evolves into an industry norm, standard or regulation. However, even if the individual returns to this type of strategy become diffused, a collective good remains in the form of improved consumer confidence in the overall image of fresh produce.

- Product-general, producer-exclusive strategies (e.g., direct marketing) also pose challenges because there are no clear market signals directly tied to the product at the time of purchase. Since these strategies are based on consumers associating desired market outcomes with people or places, rather than a brand or label, relationships and contracts are their sole means for creating confidence and assuring satisfaction. And, there is no easy way to extend this market because the strategy is person- or place-bound.

- Product-general, producer-inclusive strategies (e.g., industry-wide HACCP programs) have the potential of creating greater consumer confidence and statisfaction, but the benefits to a firm or supply chain are not necessarily readily identifiable in terms of higher prices. Consumers may simply expect a minimum level of experience or credence attributes in their fresh produce supply, without actually knowing that this minimum is a result of an industry or supply chain adopted strategy. These strategies may also be preventive in nature, designed to minimize the risk of high profile product recalls or product scares (e.g., recent microbial outbreaks in various fruit and vegetable industries), which can severely undermine consumer confidence.

- Since strategies are highly inter-dependent, both in terms of the range of strategies adopted by individual firms and in terms of the set of strategies adopted by all firms within a particular fresh produce market, a combination of strategies must be adopted in order to balance between the need for market consensus and market innovation.

References

Baines, R. N. and W. P. Davies. 1997. "Food Quality Assurance, Public Perceptions and International Benchmarks," In *Globalisation of the Food Industry: Policy Implications,"* R.J. Loader, S.J. Henson and W.B. Trail, editors, University of Reading, pp. 109-124.

Baker, G.A. 1998. "Strategic Implications of Consumer Food Safety Preferences," *International Food and Agribusiness Management Review*, 1:4:451-463.

Barzel, Y., 1982. "Measurement Cost and the Organization of Makets," *Journal of Law and Economics*, 25 (April): p. 27-48.

Codron, J.-M. 1999. *Consommation et distribution aux Etats Unis: la consommation en croissance.* Infos-Ctifl, 149 (Mars), 19-21.

Darby, M.R. and E. Karni. 1973. "Free competition and the optimal amount of fraud", *Journal of Law and Economics*, 16, 67-88.

Hassan, D. and S. Monier-Dilhan. 1998. *Les démarches de qualité dans l'arboriculture fruitière: une exploitation des résultats de l'enquête "vergers"* , Institut National de la Recherche Agronomic (INRA) – Toulouse, Série D: No. 98-01R.

Lancaster, K. 1979. *Variety, Equity and Efficiency*, Columbia University Press.

Mc Laughlin, E. & Perosio, D. 1994. "Fresh Fruit and Vegetable Procurement Dynamics: the Role of the Supermarket Buyer," Cornell Food Industry Management Program Working Paper.

Moreau Rio, M.-A. and C. Roty. 2000. *Agro-environnement: Attitudes des consommateurs de fruits et légumes face aux crises alimentaires et environnementales*. Centre technique interprofessionnel des fruits et légumes (CTIFL), Paris.

Murray, D.L. and L.T. Raynolds. 1999. "Alternative Trade in Bananas: Obstacles and Opportunities for Progressive Social Change in the GlobalEconomy." *Agriculture and Human Values*, 17:1 (March 2000).

Nelson, P. 1970. "Information and consumer behavior," *Journal of Political Economy*, 78:2 (March/April): 311-329.

Northern, J. and S. Henson. 1999. "Communicating Credence Attributes in the Supply Chain: the role of trust and effects on firms' transaction costs." Paper presented at the 1999 World Congress, International Food and Agribusiness Management Association, Florence, Italy.

Olson, M. 1965. *The Logic of Collective Action. Public Goods and the Theory of Groups,* Cambridge: Harvard University Press.

Rogge, A. 2000. *Livre Vert: Valoriser l'offre de fruits et légumes français*, Fédération des Entreprises du Commerce et de la Distribution: Paris.

Teisl, M., B. Roe, and A. Levy. 1999. "Ecocertification: Why it may not be a "Field of Dreams,"" *American Journal of Agricultural Economics*, 81:5:1066-1071.

Triole, Jean. 1988. *The Theory of Industrial Organization,* Cambridge, Massachusetts, MIT Press.

Unnevehr, L.J., G. Miller and M. Gòmez. 1999. "Ensuring Food Safety and Quality in Farm-level Production: Emerging Lessons from the Pork Industry." *American Journal of Agricultural Economics,* 81:5:1096-1101.

Valceschini, E. 1999. "La Politique Francaise des Certifications de Qualité: Remise en Cause et Perspective dans le Contexte International." Draft paper presented at INRA, Groupe Fruits, October 18-20 meeting, Angers, France.

Zulauf, C. and T.L. Sporleder. 1994. "Assessing Federal Grade Criteria for Fruits and Vegetables: Should Nutrient Attributes Be Incorporated ?", in *Re-Engineering Marketing Policies for Food and Agriculture*, Food and Agricultural Marketing Consortium, p. 130-140.

Table 1. Strategies Matrix -- Examples of Strategies from France and the U.S.		
	Producer-Exclusive Strategies	**Producer-Inclusive Strategies**
Product-Specific Strategies	Growers Perlim Ocean Spray Retailers Carrefour Auchun Traders Dole Sunkist	Geographic Origin L'Appellation d'origine contrôlée, AOC L'Appellations d'origine protégées, AOP L'Indications Géographiques de Provenance, IGP Organic U.S. Organic Certification Programs Le logo Agriculture Biologique, AB Other "Quality" Attributes Certification de conformité L'Attestations de Spécificité Le Label Rouge
Product-General Strategies	Retailers' cahier des charges, non-label Long-term relationships Single-supplier contracts and arrangements Farmer markets and other forms of direct marketing in U.S.	Charte Professionnelle - French, minimum Standards for IPM USDA minimum standards for produce "quality" and "condition" USDA minimum standards for "organic" USDA/AMS quality systems certification program (QSCP) HACCP programs adopted by industries and supply chains ISO Certification adopted by industries and supply chains