

Supermarkets and Produce Quality and Safety Standards in Latin

America¹

Fernando Balsevich, Julio A. Berdegúe, Luis Flores, Denise Mainville, and Thomas Reardon²

Supermarkets in Latin America are imposing standards of quality and safety on producers of fresh fruits and vegetables (FFV) mainly for the domestic market. This paper is a synthesis of recent case studies from a range of Latin American countries. The range includes Brazil, Costa Rica, Guatemala, and Nicaragua – the range being in decreasing order of household income, share of supermarkets in overall food retail, and from strongest to weakest domestic public health standards. The research is based on fieldwork in Brazil over 2002 and in Central America November 2002 – February 2003, including interviews with supermarket chains, wholesalers, and suppliers. The questions focused on procurement practices and formulation and application of standards.

The paper begins by analyzing the “trade bias” in the literature on FFV standards and argues for the need to pay close attention to the role of supermarkets in setting quality and safety standards for domestic suppliers. This role is both a neglected area of research and an important one because supermarkets in Latin America buy far more from local producers than is exported from Latin America to the rest of the world. The next section focuses on changing procurement systems of supermarket chains in those countries, showing that the shift from reliance on traditional wholesalers to centralized procurement and “specialized

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² Balsevich, Flores, and Mainville are doctoral, masters, and doctoral candidates at Michigan State University. Berdegue is President of RIMISP, Santiago, Chile. Reardon (corresponding author, Reardon@msu.edu) is Professor at Michigan State University. We are grateful to Fulbright-IIE and USAID (via the Cooperative Agreement with Michigan State University, “Partnerships for Food Industry Development – Fruits and Vegetables”) for funding, and to Larry Busch, Loren Stoddard, and Laurian Unnevehr for comments.

wholesalers” gives supermarkets the incentive and capacity to impose standards. The penultimate section discusses the standards imposed by the chains. The last section discusses implications.

Need for Research on Developing Country Supermarkets’ Impacts on FFV Standards

Literature on standards for FFV in developing countries has focused on trade as opposed to domestic markets.

First, as FFV exports from developing to developed countries have burgeoned over the past decade since trade liberalization, the literature has focused on the application of safety (regarding pesticide and microbial residues) and phytosanitary (pest and diseases) standards by developed countries to developing country exports. Some of that literature has examined non-tariff trade barriers, and application of Hazard Analysis Critical Control Point (HACCP) systems and Good Agricultural Practices (GAPs) (eg., Unnevehr).

Second, a subset of that literature has focused on the imposition of a subset of these standards -- private standards of supermarket chains in developed countries – on suppliers in developing countries . Such private standards include collective standards such as EUREPGAP, and chain-specific standards such as those that U.K. supermarket chains Sainsbury or Tesco applied to their suppliers. An example of such research is that of U.K. supermarkets and Kenyan produce exporters (Dolan and Humphrey).

Third, the focus has in general been on trade rules *per se*, although there has also been some work on how the requirements of trade have affected technology use among exporting producers. For example, Thrupp argued in 1995 that developed country supermarkets require high quality from their suppliers in developing countries, which induces heavy pesticide use among the latter.

The role of standards in domestic food markets in Latin America has, however, been relatively neglected in the literature. That neglect was, in our judgment, not misguided until

recently - because the great majority of the domestic food market traditionally took place in the informal sector of small shops and wet-markets. In the past 5-10 years, however, the situation has changed greatly with the advent and rapid rise of supermarkets in the region. Reardon and Berdegué note that in Latin America, for overall food retailing, supermarkets had at most a 20% share in 1990 – but the country-population-weighted average share today is 50-60% – a transformation in one decade that took five decades in the United States.

In the study countries in this paper (Brazil, Costa Rica, Guatemala, and Nicaragua), those shares are 75, 50, 35, and 20% respectively. Note that supermarkets' share in FFV retail lags significantly behind their share in overall food retailing; for example, in Brazil, supermarkets have 75% of overall food retail but only about 30% in produce retail; in Argentina, that is 60% versus 25%, in Costa Rica, 50 versus at most 10%. But still the absolute size of the supermarket-market is astounding. Supermarkets in Latin America buy 2.5 times more produce from local farmers than Latin America exports to the rest of the world! (Reardon and Berdegué)

Hence, this paper focuses on the role that supermarkets in Latin America are playing in setting and imposing standards on local FFV producers. This is important for the following reasons. First, supermarkets are the main “formal sector” buyers of FFV (far larger than exporters as noted above) who have the incentive and capacity to impose standards. Second, supermarkets have the domestic consumer base and retailing approach that would allow them to profit from imposing standards of quality and safety. By enforcing standards on producers, they increase the safety of FFV consumption for Latin American consumers, thus improving public health, and this increases local producers' competitiveness in global markets as sales to local supermarkets serve as “training wheels” for export markets. Third, FFV are important to small producers as a possible avenue of agricultural diversification

(away from reliance on production of basic grains) because of relative lack of economies of scale, and thus are a focus of government and donor projects to assist small farmers.

The Evolution of Supermarket FFV Procurement Systems in the Study Countries

The main trends in the evolution of procurement systems among the chains in the study countries (mirroring some similar trends in the U.S., see Cook), have been as follows. First, supermarkets in the study countries, and in Latin America in general (Reardon and Berdegué) have shifted away from reliance on traditional wholesale markets for procurement of FFV. Second, procurement is now often done through centralized distribution centers (DCs). Third, there has been a concomitant shift away from traditional wholesalers toward the use of specialized wholesalers. The latter classify product collected from suppliers, often have their own production, and often have semi-contractual relations with suppliers (giving credit, technical assistance, specifying requirements of final buyers for quality standards) – and have the capacity to implement standards.

Why have supermarkets in the region shifted from traditional wholesalers towards specialized wholesalers (dedicated mainly to supermarkets)? Traditional wholesalers provide inadequate service since they lack standards and have significant bargaining power in the wholesale markets because wholesaling is usually quite concentrated per product category. Supermarkets tend to continue to procure from wholesale markets only where they cannot make adequate arrangements directly with producers through their own DCs, or where new types of wholesalers (specialized, dedicated wholesalers) emerge to focus on and meet their needs.

Mainville (2002) examined the practices of the top chain (Pão de Açúcar, a Brazilian chain in joint venture with Casino, of France). The study zone was the São Paulo region. She found a rapid shift away from per-store sourcing of FFV from wholesale markets toward the use of large DCs. She also found that over the past few years, the chains started relying on a

system of “preferred suppliers.” The latter tended to not have written contracts. However, there was a demanding and formal entry into the “register” of preferred suppliers, wherein the latter make application, demonstrate their capabilities to meet standards and delivery requirements, and are evaluated by the chain. Some of the relationships with suppliers were in the form of strategic alliances such as that with Benasse, a specialized fruit wholesaler. Finally, she found an incipient shift toward the use of contracts for a subset of FFV suppliers.

In Costa Rica, CSU (Corporacion de Supermercados Unidos) supermarkets, the chain which now has 80% of the supermarket sector, has since 1972 been relying on Hortifruti, its FFV procurement company. CSU sells nearly all its FFV under the Hortifruti label (Gallegos, 2003a and 2003b). Hortifruti is in the same holding company (CSA) as is CSU. Until about seven years ago, Hortifruti sourced mainly in bulk from the traditional wholesale market. Large lots were then delivered to its DC, broken down, and small lots distributed to the CSU stores. As CSU grew into a chain of 97 stores in Costa Rica³, the need to procure large volumes and standardize quality became crucial. In the past five years, Hortifruti shifted from mainly relying on the wholesale market until today it buys only 15% of its FFV from the wholesale market (mainly when it is short items from suppliers or there are especially good prices in the market), 10% from imports (via a specialized fruit importer), and the rest from a set of 200 preferred suppliers. Fifty of the latter are mainly fresh-processors (such as of fresh cuts) and grower/packers that aggregate product from other suppliers. The rest are individual growers or grower/packers. Each supplier must clean, crate or pack in final usable trays, and deliver to the Hortifruti DC. There are no formal written contracts, but there is a system of preferred suppliers. While 70% of those suppliers are small farmers, 80% of the volume

³ CSU, La Fragua, and Ahold entered a three-way joint venture in January 2002 called Central American Retail Holding Company (CARHCO), with 253 stores in five Central American countries.

purchased is from medium or large grower/packers. The small farmers mainly provide leafy greens for which there are few economies of scale. The other main chain (Megasuper) in Costa Rica (with 15% of the supermarket sector) has followed suit in the past two years by contracting a specialized wholesaler (Interfrutd) to set up a similar “preferred suppliers” system for most of their FFV procurement.

In Nicaragua, CSU entered 1968-1979, and then restarted in the mid 1990s, and has 22 stores there today, with 85% of the supermarket sector. Before 1998, CSU relied on direct purchases from the traditional wholesale market. Hortifruti entered Nicaragua in 1998 and also relied on the wholesale market until in 2000 it set up a system of about 50 preferred suppliers similar to that in Costa Rica, except that it added a system of collection centers in the rural areas as Nicaraguan farmers are far less likely to own trucks than their Costa Rican counterparts. At the “centros”, they make quality selection and wash the leafy greens in chlorinated water. CSU’s main competition in Nicaragua is the La Colonia chain, which still sources mainly from the traditional wholesale market and to a minor extent from preferred suppliers (mainly larger farmers of fruit) that deliver to the lead store. La Colonia plans to shift toward use of a specialized wholesaler and centralized DC.

The above cases of Megasuper in Costa Rica and La Colonia in Nicaragua show diffusion of procurement technology under the impetus of retailer competition and the need to assure quality and a continuous flow of produce. Procurement officers in the domestic chains in the countries in Nicaragua readily admit that they are adopting these new procurement systems in order to meet the competitive challenge posed by Hortifruti.

In the Hortifruti procurement system in Nicaragua, the majority of the suppliers used by the chains are small/medium farmers (who mainly supply leafy greens) but the majority of the volume comes from medium/large suppliers, who supply the “big ticket” staple items – potatoes, tomatoes, onions, mangoes, melons, and bananas. The combination of technical

assistance to growers, application of standards and controls (discussed below), and reliance on preferred suppliers is driven by the deficiencies in the traditional FFV production systems in the countries that face the supermarkets. Javier Gallegos (2003a), the head of marketing for Hortifruti in Central America, enumerates those deficiencies:

“The realities and problems of our growers and markets are as follows. The market is fragmented, unformatted, unstandardized. The growers produce low quality products, use bad harvest techniques, there is a lack of equipment and transportation, there is deficient post-harvest control and infrastructure, there is no market information. There are high import barriers and corruption. The informal market does not have: research, statistics, market information, standardized products, quality control, technical assistance, infrastructure.” (slides 4 and 5, 2003a).

Our interviews revealed that those problems increase sharply as one goes from Costa Rica to Nicaragua.

In Central America, Guatemala is in an intermediate position (in the continuum of procurement change we are addressing) between Costa Rica on one hand and Nicaragua on the other. The main chain in Guatemala is La Fragua, which with its various formats has 65% of the supermarket sector. In the past three-four years, La Fragua has moved to centralize its FFV procurement through its buying arm “Disfruve” which also uses a “preferred supplier” registry. Most of these suppliers are medium/large grower/packers. A typical example is La Carreta, a medium sized grower/packer that has greenhouses, drip irrigation, and its own trucks. La Carreta supplies La Fragua stores in Guatemala and now in La Fragua’s recently acquired chain in El Salvador, Despensas don Juan, and even sells a line of six items to La Colonia in Honduras. It is thus a small regional multinational, following the regionalization of supermarket chains themselves in the same way that Hortifruti followed the chains’ expansion over the region. These medium/large suppliers pack the product ready for

supermarket shelves (just as Hortifruti requires in Costa Rica), and deliver either to the Disfruve DC or to specific La Fragua stores. Moreover, as does Hortifruti in all countries, Disfruve also procures some FFV items from specialized wholesalers. Some of the latter are regional multinational specialized wholesalers. Other specialized wholesalers include heads of grower groups like the Distribuidora de Fresas San Francisco (strawberries). Note that the system used by Disfruve is similar to that of Hortifruti in that it is a preferred-supplier system, but Disfruve has not yet reached the degree of technical assistance and support for its grower group, and thus is reliant on the suppliers' capacities, as they are, to meet La Fragua's quality standards.

In sum, there has been a rather rapid shift over all the case study countries, with the earliest adopters in the richer countries (Brazil and Costa Rica), from reliance on the traditional wholesale market to own-organization of FFV procurement, through DCs, specialized wholesalers, and lead-suppliers programs. The diffusion of this change was spurred by the leading chains and by the regional-multinationalization the supermarket chains themselves, followed with a lag by the regionalization of the procurement companies either associate-businesses of the chains (e.g., Hortifruti, Disfruve) or in close commercial relations (Interfrutd, Benasse). This rapid centralization and gradual regionalization of procurement (with FFV trade intra-company) has rapidly altered conditions for the group of mainly medium and small-medium suppliers that focus on the upper and middle-upper income urban market which is a market for quality FFV. The regionalization is incipient – 16% of the FFV in CSU stores in Nicaragua come from Costa Rica, for example, and there are only beginning exchanges between Hortifruti and Disfruve as the two procurement poles of the only regional chain in Central America. Note also that the imports from outside the region are similar to these internal flows, and a number of these suppliers at the same time are heavily engaged in

exports of FFV, so that they are adapting to changing domestic as well as export markets, marked by increasing demand for quality and with increasing consolidation of buyers.

The Implementation of Public and Private Standards by Supermarkets

This section focuses on the systems of standards imposed by supermarket chains in the study countries. First, the supermarket chains and their procurement agents are not yet significantly constrained in intra-regional sourcing by phytosanitary standards at borders. This is because their intra-regional sourcing is still minor (especially for chains in Costa Rica and Guatemala, although more for Honduras and Nicaragua that tend to import more from the first two), and the FFV imported from the U.S. and Chile are not facing major phytosanitary barriers.

However, procurement officers noted that in intra-Central American trade, there are substantial “administrative” barriers such as hold-ups (delays) wherein informal payments are required, or product shipments are blocked.

Second, the main standards imposed by chains in all study countries from Brazil to Nicaragua are quality standards. These regard mainly appearance and size. These are strictly enforced and monitored in every shipment from suppliers – at reception at the DCs of the chains in Sao Paulo, and at the DCs of the specialized wholesalers responsible for FFV procurement in the Central American chains. The exception is for the currently remaining very roughly 20% of FFV that supermarkets still source from traditional wholesalers, which are charged to make the selection according to quality standards when buying at the wholesale market.

One interview after another in our studies showed clearly that after the “first hurdle” cost requirement, the quality standard is currently the central focus of the procurement officer. In the main chains in the most demanding markets (in particular Brazil but increasingly also Costa Rica), product safety is a close tie with quality for second place after cost. Supermarkets mainly compete with each other on costs, and stay within 10-30% of the

prices of street fairs and central markets that still dominate informal FFV retail; in special weekend promotions the formats focusing on poorer consumer segments actually price at the same prices as the street fairs to convince weekend shoppers coming for non-FFV products to also do their FFV purchases in the store.

Quality standards then become crucial to differentiate the supermarkets' product from that of the markets and street fairs. The supermarket's marketing strategy is that selling higher quality produce compensates for the higher prices, although supermarkets are concerned with the relatively low penetration they have in the FFV market and recognize that they are not yet competitive in price with the street fairs and markets. They expressed the hope that with the help of centralization and mass procurement with standardization they will drive down costs over time while maintaining quality, and increase their market share. The technical assistance that specialized wholesalers give to farmers focuses mainly on quality aspects as well as flow rates and volume; for example, planning the planting calendar with the farmer is a key technical assistance activity.

None of the chains pays a price premium, however, to producers for special levels of quality. Rather, they set a price and then screen for minimum levels of quality. In all the chains interviewed, the supplier bears the cost of product not meeting quality standards. The supplier is usually responsible for screening his/her own product before it is collected by the specialized wholesaler or delivered to the DC. Once the product is received by the supermarket procurement agent, product that does not meet the standard is deducted from the payment and disposed of. The product that does not meet the standard that is held back from delivery by the supplier is typically sold in secondary markets such as to traditional wholesalers, markets, and street fairs. For growers that also export, they make a three-way selection, with the best (that meeting export standards of safety if those are above those of the

supermarkets) exported, the second tier sold to supermarkets, and the bottom tier sold to secondary local markets.

Third, there is a sharply descending pattern of FFV safety (E. coli and pesticide residuals) standards applied by supermarkets as one goes from the “advanced” case of Brazil, to the “intermediate-incipient” case of Costa Rica, through the “incipient” case of Guatemala, to the “not yet started food safety standards” case of Nicaragua. Note that this pattern roughly coincides with incentives and capacity variables: (1) public regulations for food safety, including country-level adoption of international standards such as Brazil and Costa Rica’s adoption of CODEX standards for safety variables; (2) existence and cost of government and private sector labs to perform pesticide and E. coli tests, (3) incomes and education and “quality consciousness” of consumers, (4) degree of penetration of supermarkets in FFV retail (and overall food retail), and (5) time elapsed of presence of global and regional retail multinationals in the country.

Brazil and Costa Rica, the only two countries in which supermarket chains impose and enforce FFV safety standards, recently have formulated public regulations/standards with respect to FFV safety. In general, these regulations are not applied in the (majority) informal FFV retail sector and the wholesale markets. Hence enforcement of public regulations is the domain of those who have the incentive and capacity to do so – the modern large-scale food industry, here the supermarket chains.

There are similarities and differences over how and how much supermarket chains apply food safety standards in Brazil and Costa Rica. In terms of similarities, the lead chains in both countries do not make specific safety claims per FFV item; for example, Pao de Acucar or Hortifruti/CSU do not put a “food safe” label on their produce. They both allow, however, suppliers that do have such labels to use them, although the chains do not verify the claims of the labels. Examples include the Syngenta joint venture’s low-pesticide label on its

tomatoes in Costa Rica, or the La Carreta label showing Guatemala's "PIPAA" certification affixed to its produce sold in Honduras and Guatemala, or hydroponics and organics labels placed by suppliers on their packages delivered to Pao de Acucar.

Moreover, both Pao de Acucar and CSU/Hortifruti emphasize the creation of an image of their entire FFV section as being safe by communication to consumers periodically that they test water safety and pesticide residuals. However, they do not directly communicate that at the points of sale or on the produce. For example, Hortifruti-Costa Rica obtained in 1998 the "sello azul" for low pesticide use (geared to the U.S. FDA/EPA standard), a certificate given to the company by the government, but they do not use that to market to local consumers, except in a one-time intensive publicity campaign. Their marketing strategy is to associate the name Hortifruti with quality and safety in the consumers mind without the use of product labels. That is both a competitive edge vis a vis other chains, but also in relation to the street fairs and central plaza markets.

Hortifruti is also experimenting with the permitting of the use of a new label for low pesticide on tomatoes (from a grower that has a joint venture with Syngenta), thus following the "agriculture raisonnee" (controlled pesticide use) new trend in the French agrifood sector, where suppliers and chemical companies work together to present an option that lies between conventional and organic).

Finally, while there appears to be in Brazil a greater burden of legal responsibility and liability felt by the chains, in both Brazil and Costa Rica there is an application of safety standards in particular to leafy-green standards at the time of qualification for entry into the supplier registry. In particular, water safety certification is required and tested. Pao de Acucar and Hortifruti both apply safety standards that are part of a mix of quality and safety standards applied to preferred suppliers.

A difference emerges in terms of the infrastructure available to test products. In Brazil, Pao de Acucar has its own labs for testing pesticide residues and presence of E. coli on sampled lots of FFV that come in from suppliers, and tests the water of suppliers. By contrast, Hortifruti only has limited in-house E. coli and water testing capacity, and has to rely on government labs for testing pesticide residues. Thus, of 230 products in the inventory of Hortifruti in Costa Rica, tests are done on only 18 products for E. coli and pesticides, and that only with a limited sample once a month, from the lots of product delivered. They test pesticides with an expensive government lab (they lamented the high cost of 200 dollars per test and felt they could extend the testing were the tests cheaper) and E. coli with cheap private labs (10 dollars a test) and their own in-house small-scale testing with a cheap kit at the warehouse. If they find a problem, they do not de-list the supplier, but do specific technical assistance and training of the supplier. This is because their main emphasis is quality and volume, and they fear being too pushy with suppliers as there is a limited set of capable suppliers in the country, and the preferred of the preferred supplier set are medium/large horticulturalists who also export and thus have a number of alternatives.

In both of the other countries (Guatemala and Nicaragua), some products are sold with organic labels, and a few products from a major supplier are sold with the public/private certification "PIPAA" for food safety. But the chains do not require or enforce any certification except for organics. The safety label on a few products is done by the supplier voluntarily to get a competitive edge. PIPAA (Agricultural and Environmental Integral Protection Program) appears to have promise for application to supermarket chains in Guatemala, and could be a useful model for the other countries. PIPAA to date has mainly been charged with assisting suppliers to and verifying the application of safety standards for produce export required by importing countries. After managing the snow pea pesticide crisis from 1991 to 1993, and the Cyclospora-raspberry case since 1996 until now (Calvin et al.,

2002), PIPAA has years of experience working with international agencies such as FDA, USDA, CFIA and PAHO. PIPAA pioneered in a number of ventures in training inspectors, inspecting farms and participating in phytosanitary pre-clearance programs with the U.S. Department of Agriculture in melons, mango and papaya. In view of the need to apply the expertise acquired in the export market to the local and regional market needs, PIPAA's expertise was used in a new service known as the Safety Certification Seal. The conditions are strict with respect to process control in safety assurance programs. Companies supplying La Fragua supermarkets in Guatemala are upgrading their production systems with PIPAA's Safety Certification Program, but it is not yet mandatory.

Conclusions

The above analysis gives rise to several conclusions. First, the incentive for supermarkets in Latin America to apply both quality and safety standards (and not just focus on price or cost) will rise as one goes from poorer to richer consumers who want to go beyond fulfilling necessities toward quality and have luxury of worrying about safety. Second, in the short to medium run, the incentives to "get quality right" will be more important than those to "get safety right" for most FFV products; the exception is leafy-greens, which have an image in most countries among consumers of being potentially unsafe (dripping with microbes that cause hepatitis, or full of pesticides). Third, private safety standards will utilize public standards where they exist or will utilize internationally established safety standards. Fourth, the capacity to implement quality and safety standards (i.e., impose them on suppliers) will rise as supermarkets' buying power over suppliers increases – that is, the more they centralize their own procurement and rely on contracts and direct producer relations, and the less they rely on spot markets such as the traditional wholesale market.

The case studies showed how rapidly the adoption of quality and safety standards is influencing markets in these countries. Future research will need to address how such market

developments affect consumer welfare and industry structure. Markets segmented by quality and price may serve the varied needs of consumers more effectively than a single minimum quality standard.

A clear note of challenge to farmers comes through in the study. The great majority of the product acquired by supermarkets at present comes from medium/large farmers (except for leafy greens). The continuation and deepening of the trend (which appears inevitable as procurement systems continue to develop, suppliers adjust to standards, and the cost of testing products falls) toward the broader application of stricter quality and safety standards by supermarkets will be a challenge for smaller farmers, except for the most trained, equipped, and commercially oriented ones. For the producer, keeping that lucrative but competitive and demanding market is likely a strong incentive to meet all quality standards.

The supermarket chains, locked in struggle with each other in a highly competitive industry with low margins, seek constantly to lower product and transaction costs and risk – and all that points toward selecting only the most capable farmers, and in Latin America that means mainly the medium and large farmers. Moreover, as supermarkets compete with each other and with the informal sector, they will not allow consumer prices to increase in order to “pay for” the farm-level investments needed to meet quality and safety requirements. Who will pay for water-safe wells? Latrines and hand-washing facilities in the fields? Record keeping systems? Clean and proper packing houses with cement floors? The supplier does and will bear the financial burden. As small farmers lack access to credit and large fixed costs are a burden for a small operation, this will be a huge challenge for small operators.

It is thus inevitable that standards demanded by consumers are increasingly a driver of concentration in the farm sector of Latin America. As supermarkets’ direct share in the FFV market grows, and as their influence is increasingly felt on the practices of informal markets through competition for the most profitable clients (the middle and high income segments)

and consumer expectations, the effect of rising standards will spread over the farm sector. While it is likely that this means consumers will consume fewer pesticides and harmful microbes, and have better quality FFV, it also means that development programs, in the context of weak public support systems for agriculture, will have a challenge and a mandate to assist small farmers to make the transition. Innovative methods to accomplish this are explored in Boselie, Henson, and Weatherspoon (2003).

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