



KNOW YOUR FOOD

You are what you eat. But what are you eating?



LEADER

The consumer is master of the feast

A transparent food system is hard to find. Even in the world's most developed economies, giant food companies keep their tactics and techniques under wraps under the pretense of keeping their intellectual property safe and their production lines untainted.

But food is a fundamental ingredient of our lives and our health, following only air and water in its importance, and consumers have a right to know how the food they buy is produced. Every country needs to ensure the transparency of its food system, though governmental monitoring need not be the only force at work. Consumers have the opportunity every day to vote with their fork, as food writer and activist Michael Pollan says.

Creatures of habit

The Lebanese Broadcasting Corporation's Marcel Ghanem, in addressing the issue of food safety on the Kalam El Nas program this past July, generated strong backlash from the Lebanese public, but these reactions have been largely misguided. When food is shown to contain unsafe levels of bacteria, when people are getting sick, and even dying, from eating out, and when we know that some farmers are using wastewater for irrigation, what is the proper reaction? Though fear may be the knee-jerk response, outrage and action are much more likely to produce productive results.

Some would suggest that we hound our government officials to fix these problems for us. Indeed, government action seems to be what Ghanem's program was calling for most prominently. But as we know too well, endeavors like this can take years and have already fallen through the cracks between successive governments on several occasions. What consumers can do right now is perhaps a more necessary discussion.

When faced with a food safety or food quality scare, one need not throw their hands up in the air and say, "Nothing is safe, so I will go on eating as I always have". Instead one can ask: "What can we do?"

It is a good question and it has a simple answer. Be the regulator. Consumers are creatures



Lebanon's renowned table has come under relentless scrutiny


of habit. We shop in rituals, often sticking to the same brands of canned goods, chicken, candy, etcetera. So why not investigate these habits?

Packaged and prepared foods have become a godsend in a time of two working parents. But in their quest for market share and the bottom line, food manufacturers have turned to chemicals to keep shelf lives longer and tastes more intense. The ingredients on the label can have a serious effect on our health, not to mention those that are not disclosed [see story page XXX].

Lebanon's poultry industry is one of the country's success stories, producing enough chicken to satisfy private consumption and exporting frozen product around the region as well. But what is the difference between the big three poultry producers? Just because the price is capped does not mean that all Lebanon's chicken is created equal [see story page XXX].

Market power

Then there is organic agriculture, which is growing worldwide, including here in Lebanon. Though a tiny sector at present, organic agriculture is growing fast and brands and distributors are multiplying by the day. But as usual, the devil is in the details [see story page XXX].

For this report EXECUTIVE played consumer. We looked at some sectors of Lebanon's food industry and investigated the fundamentals. Naturally, we were not always well received, but a door held closed often says as much as a door opened. And if consumers were able to take control over the food they consume, shifting the tide of a free market food system toward quality and health might come faster than waiting for regulation — and could outlast any government. 

ADDED EXTRAS

Small amounts can have large effects

For discerning food shoppers, the label is king. Whether figure or frugality is paramount, food labels are the place to start when becoming a conscious consumer. But the ubiquity of the E-number (the international classification system for food additives) coded ingredients, and long, technical terms outside of the traditional food lexicon, can lead consumers into a false comfort with the familiar where the additives in packaged foods are concerned.

Nancy Hobeika, a licensed nutritionist and clinical dietician who works in tandem with a clinical psychologist on some of her cases, sees frequently in her practice the link between additives in food and behavioral disorders in children.

“Nutrition plays a 20 to 40 percent part in ADHD [Attention Deficit Hyperactivity Disorder]; this has been proven by scientific research,” says Hobeika. Though scientists remain unclear as to whether behavioral disorders such as ADHD and its little brother, Attention Deficit Disorder, can be caused by food additives (particularly artificial coloring), the link between additives and the exacerbation of existing behavioral conditions has been known since 1980.

Some European governments have either banned or called for a gradual ban on some of the most potent artificial colors such as ‘Tartrazine,’

‘Sunset Yellow’ and ‘Allura Red’, and the United States Federal Drug Administration requires warnings to be printed on packages containing these colors, as they can not only affect behavior but are also highly allergenic.

And beyond this, there are tales of sweets containing the illegal and highly carcinogenic colorant ‘Sudan Red’ creeping into the Lebanese market every few years.

Colors are just the beginning. Though government action has not kept up with research in most jurisdictions around the world, some flavor enhancers have been found to cause heart complications and central nervous system-related problems such as strokes, Alzheimer’s and Parkinson’s; artificial sweeteners have been found to be carcinogenic, and certain preservatives can cause long-term respiratory problems, DNA mutations and cancer — just to name a few.

Subtracting the additives

Some private actors are beginning to recognize the potential effects of additives. Sesobel, a small, non-profit school in Keserwan for handicapped and mentally challenged children, also has a small factory in Jezzine where it produces batches of natural products without additives.

“We work for people who are handicapped. We should make the food more healthy so we decided to make food without additives,” says Sesobel Plant Manager Paul Kattar.

The staff at Sesobel adopted the policy of clean products for sale and clean food for its children due to the growing but not yet widely recognized belief that additives in food can encour-

Sesobel makes additive-free products for its handicapped and mentally challenged children





If you know what the words mean on the ingredients list, it's probably ok to eat

age behavioral disorders in children. The preserves sold by Sesobel in their own stores are free of preservatives, artificial colors and any other additives and are made from fruits grown by the organization's farm. The farm is not certified organic due to the cost and length of the certification process, but Dr. Joseph Haddad, director of research at Sesobel and president of the Lebanese Pediatric Association, says the produce is tested for chemical residues before use. This means that in his opinion Sesobel's products are as healthy as they can be.

"It is well known that some of the additives may provoke chemical reactions in the food and can lead to toxicity. To avoid this cascade of toxicity it is better that you develop healthy food. That was our aim," says Haddad.

For additives, as with almost any substance, the poison is in the dose and herein lies the rub. The Lebanese Standards Institution LIBNOR has standards dictating the appropriate usage of many additives, capping their presence in food products at levels deemed to be safe. However, as diplomatically explained by Lena Dargham, director general of LIBNOR, the relevant authorities do not coordinate well to make sure that standards are being followed and that food is safe.

Standards set by LIBNOR exist for the usage or non-usage of many additives, but many, if not most, of these are not mandatory because a standard published by LIBNOR has no enforcement mechanism without a ministerial decree making it obligatory.

Clear definitions for words like 'natural,' 'lite,' 'low fat' and 'healthy', along with many other health claims, do exist but are also not mandato-

ry, and are therefore not enforceable by any of the authorities responsible for food safety.

As EXECUTIVE went to print, LIBNOR had published 550 food-related standards, most of which are not compulsory. But even when standards are made mandatory, Rita Abou Obeid, managing partner of Specifico & Co, a regional food safety consultancy, is sure that no Ministry of Economy and Trade staffers are pulling items off the shelves to check how faithfully they are labeled or whether they adhere to LIBNOR standards.

Dargham said that manufacturers are starting to clean up their acts because of the potential for export to countries with stricter regulations. And in an attempt to give their standards more efficacy, LIBNOR is now offering a mark or seal to be printed on packaging to signify that a product is compliant with their standards — even those that are not mandatory. So far no food products have been granted the seal since the organization is still working out the kinks in the auditing process, but this has the potential to be a positive step in terms of consumer education and choice.

A new food safety law is in the works which will most likely leave the issue of food additives and labeling in the hands of the newly formed food safety authority [see page xxx]. It should be noted, however, that what is of equal, if not greater importance to the rules and regulations the law will enact is the funding and resources necessary to enforce accurate labeling and the exclusion of forbidden substances.

"It is well known that some of the additives may provoke chemical reactions in the food and can lead to toxicity"

So what to do?

Beyond learning to make condiments, candies and soups at home so as to avoid buying pre-made ones in the store, there are few options to avoid additives altogether, though there are some that are more dangerous than others (see chart) depending on the individual concerned and the additive concentration, which in Lebanon can scarcely be confirmed.

Furthermore, the Ministry of Economy and Trade has set up a consumer protection hotline where consumers can report products they believe should be investigated. If colors seem too bright, if children have an allergic reaction to their food or if headaches occur after eating a specific food, a call to the hotline may just get to the bottom of it.

But Obeid is not holding her breath: "We are not used to having our rights in this part of the world... In other places [these] things are taken for granted." ■

Additives & health impacts in random sampling of food items

Food Item	Additive # on Label	Additive name	Purpose	Health affects	Center for Science in the Public Interest ruling
Chick Peas	E385	Calcium disodium ethylenediaminetetraacetic acid (EDTA)	Stabilizer	No notable adverse effects at normal dosage	Safe
	E223	Sodium metabisulphite	Preservative	Can cause allergic reactions, aggravate asthma and other respiratory conditions	Certain people should avoid
Chicken stock cube	E621	Mono sodium glutamate	Flavor enhancer	{ Can exacerbate asthma & heart conditions, encourage cancer cell growth and cause acute headaches, nausea, diarrhea and skin tightening	Avoid
Canned chicken luncheon meat	E631	Disodium inosinate	Flavor enhancer		Safe
	E627	Disodium guanylate	Flavor enhancer		Safe
	E339	Sodium phosphates	Stabilizer		
	E621	Mono sodium glutamate	Flavor enhancer	Can exacerbate asthma & heart conditions, encourage cancer cell growth and cause acute headaches, nausea, diarrhea and skin tightening	Avoid
	E316	Sodium erythorbate	Antioxidant	No notable adverse effects at normal dosage	Safe
Vegetable shortening	NA	Dextrose		Can contribute to diabetes	Cut back
	E250	Sodium nitrite		Possible carcinogen, can contribute to lung disease	Avoid
	E319	Tertiary butylhydroquinone	Antioxidant	May cause nausea, vomiting and delirium, may be carcinogenic	NA
	E477	Propylene glycol	Thickening agent	{ No notable adverse effects at normal dosage	Safe
E330	Citric acid	Chelating agent	Safe		
Children's cereal	NA	Distilled monoglyceride	Emulsifier	No notable adverse effects at normal dosage	Safe
	E102	Tartrazine (yellow)	Color	{ May cause hyperactivity & lowered IQ in children	Avoid
	E133	Brilliant Blue color	Color		Caution
	E129	Allura Red color	Color		Caution
	E110	Sunset Yellow	Color		Avoid
Cheese spread	E341	Calcium phosphates	Emulsifier	{ No notable adverse effects at normal dosage	Safe
	E452	Polyphosphates	Emulsifier		Safe
	E331	Sodium citrates	Chelating agent		
	E450	Diphosphates	Emulsifier		
Chocolate	E322	Soy lecithin	Emulsifier	{ No notable adverse effects at normal dosage	Safe
	E476	Polyglycerol polyricinoleate	Emulsifier		Safe
Balsamic vinegar	E150d	Sulphite ammonia caramel	Color	May cause intestinal distress, possible carcinogen	Avoid
Instant lemon drink mix	E300	Ascorbic acid	Antioxidant	No notable adverse effects at normal dosage	Safe
	E330	Citric acid	Flavoring	{ No notable adverse effects at normal dosage	Safe
	E331	Sodium citrates	Flavoring		Safe
	E341	Calcium phosphates	Emulsifier		Safe
	E466	Carboxy methyl cellulose	Thickener		Safe
	E440	Pectins	Gelling agent		Safe
	E551	Silicon dioxide	Gelling agent		
	E415	Xanthan gum	Thickener		Linked to bowel tissue death in infants, highly allergenic
	E951	Aspartame	Sweetener	Can cause headaches/migraines, dizziness, seizures, nausea, numbness, muscle spasms, weight gain, rashes, depression, fatigue, irritability, tachycardia, insomnia, vision problems, hearing loss, heart palpitations, breathing difficulties, anxiety attacks, slurred speech, loss of taste, tinnitus, vertigo, memory loss and joint pain. Can exacerbate brain tumors, multiple sclerosis, epilepsy, chronic fatigue syndrome, Parkinson's disease, Alzheimer's, mental retardation, lymphoma, birth defects, fibromyalgia and diabetes	Avoid
	E950	Acesulfame K	Sweetener	Possible carcinogen, can cause headaches, depression, nausea, mental confusion, liver effects, kidney effects, visual disturbances	Avoid
	E102	Tartrazine (yellow)	Color	{ May cause hyperactivity & lowered IQ in children	Avoid
E110	Sunset yellow	Color	Avoid		
Mayonnaise	E202	Potassium sorbate	Preservative	{ No notable adverse effects at normal dosage	Safe
		calcium disodium EDTA			Safe
Canned white crab meat	E621	Mono sodium glutamate		Can exacerbate asthma & heart conditions, encourage cancer cell growth and cause acute headaches, nausea, diarrhea and skin tightening	Avoid
	NA	Sodium acid pyrophosphate	Emulsifier	{ No notable adverse effects at normal dosage	Safe
	NA	Citric acid			Safe
	NA	Calcium disodium EDTA			Safe
	NA	Sodium metabisulphite			Highly allergenic - especially among asthmatics



A chicken's life is a cramped life for most of the 23 million farmed in Lebanon every year

PALTRY ROOM TO MOVE

For birds and producers alike

Lebanon's poultry industry is the only sector within the food system in which production is sufficient to satisfy domestic demand. It produces 135,000 tons of meat per year, according to the Food and Agriculture Organization's 2007 statistics (the most recent available). You would think, then, that the government would want to keep a close eye on it, as Lebanese chicken is exported in increasing quantities all over the region and is a staple food at home as well. But alas, experts say that practices in the poultry industry remain as unchecked as in any other. So EXECUTIVE sought to find out if the quality of Lebanese chicken matches the price.

Out with the old

It is the big three poultry brands, Hawa, Shuman and Tanmia, that have raised Lebanon's poultry production to such a high

volume, with the big three alone producing more than 27 million birds per year, according to their own reports. But the quality of chicken meat and the nutrition it provides is directly related to the feed the animal consumes, the space in which it lives and even the conditions in which it is slaughtered. Best practices in this regard are currently being debated around the world as modern methods champion consistency, while more traditional methods offer a more natural process.

All three main chicken producers have been gradually modernizing and expanding over the past decade. Though they started out using traditional methods of farming, they all now primarily use closed-system farming operations. This means that the chickens live in a closed house with forced ventilation and specially designed lighting to keep the chickens calm. The closed system is meant to insulate the animals from all pathogens in the ground and air outside so that the chickens are as protected as possible from disease and contamination. The birds never leave the houses and are generally packed around 15 birds to a square meter.

"When you have a closed system the bio-security is 100 percent better," said Ralph Freiha,



Terms like organic and free range are becoming increasingly common on egg packets. But what do they mean?

vice president of Youssef Freiha and Sons, parent company of the Lebanese Poultry Company (LPC), which owns Shuman.

In most cases, contract farmers are also required to outfit their farms with closed-system technology. In the case of Shuman, few traditional farms remain.

All three companies also have their own, automated slaughterhouses and have either obtained or are in the process of obtaining the International Organization for Standardization 22000 certification for food safety standards — a comfort in a country plagued by horrifying slaughterhouse images.

Though all three companies claim that the closed-system factory farm is the safest way to grow chickens, there is an expanding view in the world of animal husbandry that the welfare of the animal is directly related to the taste and the quality of the meat. The closed system, at least in the eyes of concerned consumers in Western markets, is falling out of favor.

Say your prayers little chickyl!



“It’s not like you have a margin, there is no margin for error. You have to follow the competition”

A 2002 report by the Department of Animal Sciences at Colorado State University in the United States stated that everyday stresses of confined living, and especially the acute stresses preceding slaughter, can have an ill effect on the quality of the meat. Acute stress causes the chicken to secrete stress hormones, which alters the taste of the meat, and chronic stress can cause depletion of muscle glycogen, decreasing the size of the meat and darkening its color.

When owned by the Shuman family, Shuman Farms was known for having an open-system, more traditional way of operating, but, said Freiha, “The competition is really very fierce in the market. And you work on cents; it’s not like you have a margin — there is no margin for error. You have to follow the competition.”

Consumer poultry, meaning the chickens sold in grocery stores and bought by private consumers, has a price ceiling implemented by the Ministry of Agriculture, as it is seen as an essential food product along with bread and certain oils. This means that poultry producers cannot raise their prices and must produce at a cost below approximately \$3.45 per kilogram if they want to turn a profit. Freiha says that the ceiling is so low that he

does not even turn a profit from the chickens he sells in supermarkets.

The Shuman family controlled operations for the brand until 2003, but by 2008 LPC, a subsidiary of Freiha Holding, had completely taken over operations for the brand and owned 30 percent of the name.

Two of the three big companies herald their good practices right on the package, saying they do not use antibiotics in poultry raising. Administering antibiotics to sick animals meant for human consumption is common practice all over the world. As long as proper protocols are observed, the end product will not contain any residues of the medication and the farmer will not lose an animal to disease.

The improper use of antibiotics, however, is a serious concern. When antibiotic residues are ingested, it is essentially like taking a small dose of unnecessary medication. Over-prescription of antibiotics and unintended extraneous doses can cause the very bacteria the antibiotics are meant to fight to mutate and become antibiotic resistant. This is of particular

There is little room to room in Lebanon's closed farm systems



concern in Lebanon as both Zeina Kassaify, professor in the American University of Beirut (AUB) department of nutrition and food sciences and Dr. Rana Sharara, practicing pediatrician and assistant professor of pediatrics at AUB, said that Lebanon has a drastically over-medicated population.

Both Tannia and Hawa told EXECUTIVE that they do not use any antibiotics whatsoever because their closed-system facilities keep pathogens from reaching the birds.

“We don’t give antibiotics to the chickens. We give vitamins,” said Ziad Aoun, marketing manager for Hawa Chicken. “In Lebanon there are too many open system farms, but our farms are closed system. And this system will decrease the relation with the outside because viruses are in the air... This is why we don’t have the diseases that chickens get when they are in open system farms.”

EXECUTIVE took supermarket samples from Hawa, Tanmia and Shuman to the Industrial Research Institute’s (IRI) certification lab in Hadath in order to be sure. IRI tested for a chemical commonly found in antibiotics and found no traces in any of the samples from any of the companies. Though desirable, these results are not necessarily definitive. While it was profes-

sionally administered, the testing did not investigate every possible antibiotic used in poultry and experts consulted by EXECUTIVE expressed strong skepticism at the possibility of any large-scale poultry producer operating without any antibiotic use.

“It is a general practice on poultry farms of Lebanon to use antimicrobial agents whenever mortality starts rising and gross lesions appear on the internal organs, such as the liver, heart, kidney, air sacs, etcetera...” said Elie Barbour, professor of veterinary microbiology at AUB. “However, the respect of withdrawal periods — making sure the antibiotics have time to get out of the chicken’s system before slaughter — is important and very serious.”

“Making sure the antibiotics have time to get out of the chicken’s system before slaughter is important and very serious”

Ralph Freiha of Shuman said that despite his closed system he does sometimes require antibiotics in his operation. The feed for his chickens contains a small amount of antibiotics, which is stopped 10 days before slaughter. Further, sick birds are quarantined and administered antibiotics, whose use must be stopped seven days before slaughter.

Barbour said that this is the point where the Ministry of Agriculture needs to show its teeth.

“The only way for the ministry to make sure is to sample marketed carcasses randomly from

each farm, and to analyze it for antimicrobial residues and give significant fines for those that badly manage drug administration,” he said.

Crying Fowl

Unfortunately, a lack of proper monitoring of Lebanon’s poultry purveyors is not the most worrying aspect of eating white meat in Lebanon. Capped consumer prices do not mean that Lebanon’s restaurants and caterers are not going to try to increase their margins by decreasing costs. And the way in which they do this when it comes to poultry can be downright scary. That is, by allegedly buying illegally imported meat.

“When you get chicken parts coming to Lebanon in a taxi and the heat is maybe 30 degrees and it is cleaned — dipped in water and chlorine — and sold as fresh, then you get people going to hospitals,” said Freiha, who estimates that domestic supply makes up just 65 percent of the poultry on the market.

Illegal imports come into Lebanon without proper storage, proper cooling, proper handling and without any verifiable expiration date — all of which invite spoiling and contamination. Wadih Nasrallah, general manager of Tanmia, believes that illegal imports have gotten so out of hand that they are driving down the market share of local suppliers.

“With no serious measures by the government to stop the illegal imports, the percentage of the chicken meat produced will dwindle down to below 50 percent of the consumption level,” said Nasrallah.

Legal imports do exist from Brazil, where the poultry industry is heavily subsidized. The LPC, owners of the Shuman brand, import Brazilian chickens to sell to hotels and caterers, but do not sell them branded under the Shuman name unless they are grown in a Shuman farm.

It is this kind of transparency that consumers deserve when buying food, but too often it is not what they get. In fact, even the claim above regarding where a chicken was raised is incredibly difficult to verify. The only things to do then are to ask questions, use best judgment and do not buy chicken out of the back of a taxi.

The next big thing

All the rage in the metropolises of the west are phrases like “organic,” “free-range,”

“cage-free,” and “pastured.” Such words have also been turning up on egg cartons in Lebanon’s supermarkets with growing frequency. But do these words have any place in Lebanon’s poultry industry? Opinions regarding the feasibility of these niche types of farming on a large scale seem to differ between practitioners and academics.

Free range is a phrase that must be given meaning by an enforcing agency or it falls into the category of nebulous claims such as “low fat” and “diet.” In the United States, free range only indicates that animals have had access to an outside environment. But on Lebanon’s limited land, converting to free range practices and maintaining current production levels would be impossible.

“Free range in Lebanon is not feasible. You don’t have enough land to have free range. Imagine 20,000 birds roaming around. And free range costs you about double. And since you have limitation on the price of chicken in Lebanon...” said Freiha rhetorically.

The organic trend is picking up speed in Lebanon, but organic in the world of animal husbandry is a tough nut to crack. So far the only certified organic animal operation is Biomass’s organic eggs and dairy production, which debuted in June.

Doing their best to give chickens a better life and customers an alternative to factory-farmed

chicken is the B. Balady project in Jezzine. Started by the World Rehabilitation Fund with funding from the United States Agency for International Development to give opportunities to land mine survivors in Jezzine, B. Balady sells eggs in supermarkets all over Lebanon and whole and partial chickens in their own outlet in Jezzine and the Healthy Basket store in Beirut.

The chickens live in naturally ventilated and lit houses with access to small outdoor areas in various farms in Jezzine.

AUB’s Barbour, an advisor on the project, sees it as a benefit to Lebanon, not just at the consumer level but also on a larger scale.

“This project is within the international strategies of food safety and food security, since the Middle East imports 50 percent of [its] needed foods, and climate change might reduce our local and the international production of foods, thus affecting our security,” he said. “We have to be prepared, creating new niches for production under climate change.”

“Illegal imports come into Lebanon without proper storage, proper cooling, proper handling and without any verifiable expiration date”



Competition on the shelves is tough for organic products

PLANET ORGANIC

Seeking perfection in an imperfect field

The price of organic produce is about to go through the roof. Recent media focus on food safety and the ever-present Lebanese desire to move with international trends translates into a boon for the organic food industry; but it is still in its infancy in Lebanon, having only been around since 2002, and only really selling since 2009. And, like children, young industries take wobbly, faltering steps to reach maturity, after which they may not bear much resemblance to their former selves. Still, it is important for the consumer to understand the way in which the industry currently works, and what it really means to be organic in Lebanon, if we are to make prudent consumer decisions in the current climate of fear over food safety.

The process & the product

The word “organic” refers to the process more than to the product. In most cases, a convention-

ally grown apple and an organically grown apple look exactly the same. In fact, organic fruit and vegetables may even have more flaws or individualities than their conventional counterparts because invasive and synthetically based measures are not taken to ensure uniformity.

Organic does win when shelf life is the matter at hand. “The thing is, with organic vegetables, once you pick it, its shelf life is longer because it has no chemicals to hold it. With chemicals [it] is shorter because once you pick it, you take all the chemicals from it and it’s going to start deteriorating,” said Hadi el-Solh, an organic farmer who sells his produce in Saida.

Essentially, organic farming means being free of all synthetic materials, including hormones and synthetic pesticides, herbicides and fertilizers. Organic farms must also use clean water for irrigation — an especially salient issue in Lebanon.

This type of farming leads to produce that is free of chemical residues and is as toxin-free as possible. In a world where conventional farming has become more chemistry than horticulture, keeping to this standard takes more defense than offense. Boundaries must be set and buffer zones created to keep neighboring conventional farms from contaminating organic ones.

Organic honey for Lebanese customers who are notoriously hard to keep sweet



This fact poses geographic challenges in Lebanon, where some locales are virtually impossible to protect against contamination. “We have some operators who want to go into organic certification in the Bekaa but we cannot accept them because we know that the irrigation water is not very clean, so we don’t certify farmers in the Bekaa. Also [the land] is very open and you cannot do any buffer zones,” said Khalil Haddad, general manager of LibanCert, the only Lebanese organic certification body.

The biggest organic player in Lebanon currently is Biomass, a brand that is becoming more ubiquitous by the day. The fast-emerging organic producer and distributor began on the Massoud family farm in Batroun in 2007. Today, the company sells more than 200 products in supermarkets all around the country from certified farms across Lebanon. Biomass also recently expanded into organic dairy production and is growing fast, though, according to commercial director Mario Massoud, they have yet to break even.

And though Biomass may be one of the most prominent players in the organic field, its proclivity for perfection is a frustration to some growers. Agriculturalists report that Biomass re-

A sliding scale

The high price of organic products is often blamed on the Lebanese customers’ desire for the best of the best and the belief that there are only two options: chemical-full and chemical-free. In fact, there is a sliding scale in the world of agriculture. Roula Fares, Middle East representative for FiBL, a Swedish research institute for organic agriculture, believes that educating the public about this could improve the quality of produce in Lebanon, while also giving a cleaner option to those not willing or able to spend 6,000LL [\$4] on a kilogram of tomatoes. The categories are defined below:

Conventional: Plants are treated with synthetic pesticides, herbicides, hormones and fumigants and seeds may be genetically modified. Any restrictions put on chemical usage are enacted and enforced by the Ministry of Agriculture.

Integrated Pest Management (IPM) certified: Plants may be treated for pests but such is done in a minimalistic manner with a prescribed procedure so that the finished product has no pesticide residues. Seeds conform to conventional regulations.

Organic: Plants are treated with natural and organic certified pesticides and herbicides and crops are rotated to maintain a healthy microclimate. Seeds are not genetically modified. No hormones are used.

quires their product be uniform in size, so that even if four tomatoes in a box may have come from different farms they must all look exactly the same; this type of strict selection then creates a consumer perception and expectation.

“The problem is that what you find on the market is the elite product. The consumer is willing to pay more but they want the best prod-



Enforcing uniformity comes at a cost to the environment and the wallet

uct. And when you want to give them this... you are obliged to eliminate or destroy the rest, and you have a lot of waste,” said Roula Fares, Middle East representative for FiBL, a Swedish research institute for organic agriculture.

To rectify this issue, which helps to keep prices high and environmental benefits low, the market mentality — on both the producer and consumer end — will have to change.

Why go organic?

The benefits of buying organic are two-fold. Synthetic herbicides and pesticides are both chemicals meant to kill organisms. They are therefore toxic to the body, and even if they do not cause direct symptoms they have a taxing effect on the immune system, leaving vulnerable populations like children and the elderly at risk whilst also exacerbating existing conditions such as autoimmune diseases and allergies.

Though a tougher sell, the environmental impact — or lack thereof — of organic farming is perhaps a more important reason to buy organic whenever possible. Firstly, there is the problem of runoff; the effects of conventional agriculture are felt throughout the country as pollutants do not stay put where they are first applied. When it rains, chemicals flow into groundwater and are then swept into the country’s streams, rivers and sometimes into the sea, not to mention into the public water supply. Secondly, there is the health of the soil itself. Lebanon is a small country with land that is regionally prized. Conventional agriculture does not require crop rotation, as synthetic means can be used to prop up the soil and kill any bad bacteria or organisms that have taken root.

“In organic farming, crop rotation is necessary. The soil talks and it will tell you what it

needs. But a conventional farmer who just grows tomatoes and tomatoes and tomatoes — he doesn’t care because he is using chemicals,” said Solh, who sells his wares under his own label and is also a supplier for Biomass.

But topsoil does not last forever, and it is widely believed that conventional agriculture, partnered with erosion and the geological stresses of civilization, mean that topsoil all over the world is degenerating faster than it can replenish itself.

Certified organic

An organic product is as good as its certification, and in Lebanon this is where it gets tricky.

There are two certification bodies in Lebanon with the aim of giving the word ‘organic’ a standardized meaning. LibanCert and Instituto Mediterraneo di Certificazione (IMC) are both accredited by foreign bodies (as Lebanon lacks an agency that oversees the certifiers) and follow the standards for organic cultivation of the European Union.

“Once standards are adopted by the [Ministry of Agriculture] and become law, the local certification body will be very important,” said LibanCert’s Haddad.

As happens in any industry, the virtue of the certifiers is questioned by market players, who accuse them of complacency in their monitoring. More than once-yearly visits to farms, including surprise visits, should be a large part of a certifier’s

Seals of approval



IMC, an Italian certifier with a presence throughout the Mediterranean region, came to Lebanon in 2002 when the United States

Agency for International Development (USAID) started BioCoop Lubnan. At the time, BioCoop consisted of 160 Lebanese farmers who received training and financial help to convert from conventional to organic farming in order to help Lebanon regain some of its renowned agricultural capacity lost during the civil war. IMC was brought in as the certification body for the project as one had not yet set up shop in Lebanon.



LibanCert started in 2006 in cooperation with the Swiss government, the Lebanese Ministry of Economy and Trade and the American University of Beirut, with the idea that an in-house certifier was the best way to give the organic movement more authenticity and staying power.



An IMC stamp gives security of mind... to a certain degree

work, and the farmers EXECUTIVE consulted for this story all acknowledged the potential for noncompliance, but also affirmed the commitment of farmers and certifiers to the validity of the industry.

“Can someone cheat? Yes, but I believe that anyone really involved in the organic industry would never do that because they have everything to lose,” said Biomass’s Massoud.

Organic fraud and the law

Currently, if a product says it is organic but is not, there are no legal recourses. In order for organic to have a legal definition, the Lebanese Standards Institution LIBNOR must write a standard — or recommend an international definition — which would have to be made a decree by the Minister of Agriculture.

The ministry has formed a technical committee for organic agriculture that has been drafting and revising a law with the intention of organizing the organic industry. The law was submitted for approval to both the cabinet of former Prime Minister Saad Hariri and current Prime Minister Najib Mikati, but still has yet to be approved.

In addition to seeking approval for a new law for organic agriculture, the committee is currently working on the corresponding ministerial decrees which may be signed, implemented and enforced by the Ministry of Agriculture without waiting for approval from the council of ministers. These decrees will turn LIBNOR recommended standards into actionable and enforceable directives. The decrees, all based on European Union standards, organize how the certification bodies will be approved to operate in Lebanon, and will define their duties. The standards will also include definitions of what ‘organic’ means in terms of plant production, animal farming and beekeeping.

The ministerial decree will also create a national registry for organic operators and allow the ministry to supervise the organic industry without playing a hands-on role in certification or auditing, unless noncompliance is suspected.

According to Youssef al-Khoury, head of organic certifier IMC: “As a certification body alone we cannot stop the fraud. We need the support of the Minister of Economy and Trade and the Minister of Agriculture. If there is a law that when you put organic [labeling] and you are not organic you have to pay 200 million LL, it will start to stop. Saying [you are] organic is not a sign of being organic. If you have a product labeled either IMC or LibanCert, 98 percent are real.”

The competitiveness of the organic market in Lebanon and the small amount of consumers with the funds and the inclination to pay for organic products means that mud throwing is perhaps more prevalent than noncompliance.

Rami Chemaly, a professor in the agriculture department at the American University of Beirut, said that the certifiers are doing their best but that the nature of certification does come with a certain leap of faith.

“Certification is voluntary. It means that the farmer requests certification to make sure that they are doing things properly and not as a way of granting a certificate of good health,” he said. “All farmers can cheat; you are not sitting on top of the farmers... But essentially the company relies on [their] good will.”

And though most of the industry players consulted for this report expressed faith in Lebanon’s certifiers, Nancy Hobeika, a licensed nutritionist, clinical dietician and owner of an organic meal delivery service and diet center, holds that the only way to know for sure is to have a relationship with your farmer or grow yourself.

“I tell my clients to go fetch organic labels that come from the United States or from Europe. I recommend them to grow their own inside their houses. It is not that difficult to grow some green leafy vegetables. Everybody in Lebanon has houses and land outside of Beirut,” she said.

The price of production

Contrary to logic, organic farming is not inherently more expensive. Yes, any materials such as minerals and fertilizers must be certified organic and imported, as none are produced in Lebanon, but by banishing the many chemicals conventional farmers use to produce bigger fruits and larger yields out of tired soil, overhead costs are actually cut. But here in Lebanon costly obstacles do remain.

When soil is not ‘on steroids’, the output is naturally much smaller and less dependable. As Solh, the farmer, explained, when a conventional farmer plants 1,000 tomato plants, he knows that he will get 10 tons of tomatoes when it is time to harvest. When an organic farmer plants 1,000 tomato plants he will only get four to six tons.

Furthermore, organic farmers are more susceptible to the forces of nature, such as droughts and extreme heat, as they cannot use chemical measures to combat these problems.



Labels strive to afford prestige and justify price

And for a farmer looking to make the leap, going organic is a big financial commitment. The conversion process takes two to three years. While a farmer is waiting for his soil to regenerate and cleanse itself of chemicals, he may grow and sell his produce, but not under the label of organic, meaning he is operating organically but must adhere to conventional market prices.

Furthermore, organic certification does not come cheap. Solh, for one, is certified by LibanCert and pays \$180 per hectare. With 17

hectares, that is a yearly expenditure of \$3,060 before the costs of labor and all the necessary materials for farming enter the picture.

And though the other substances required to keep the farm going are fewer than they are with conventional methods, the small population of organic farmers and the lack of centralization makes for small orders and high prices.

“It is such a small industry that you don’t have big suppliers importing for the whole country. It is each operator trying to import for himself,” said Massoud.

Another major driver of cost is transportation, as most of the market for organic products is still in Beirut. Solh sells his product in Saida, and Biomass is expanding its distribution both north and south, but for independent farmers transportation exerts an upward pressure on prices.

Packaging also takes a toll. Organic vegetables are often bagged or boxed and wrapped in plastic, with the reason for this two-fold. Packaging lessens the probability of tampering or contamination from conventional vegetables and supermarket owners who might decide to put conventional tomatoes in the organic boxes, while it also offers a crucial opportunity for branding in a market where prestige is premium.

Furthermore, as very few restaurants in Lebanon serve organic produce, organic farmers depend on everyday consumers who follow the unique Lebanese seasonal patterns of behavior that greatly affect sales.

“It’s well known now that in organic sales, the season starts in September and ends in May. June, July and August are dead months because schools are done, people are up in the mountains... they go to the beach, they go to restaurants, and restaurants don’t buy organic because they want the cheapest [goods],” said Solh.

Prices could be slightly lowered if there was more cooperation among players but the effort to form an official organization halted years ago, and recent attempts have borne no fruit.

The suspect seven

Each fruit and vegetable has a different set of challenges and therefore a different conventional treatment. In other words, some produce is safer than others to buy conventional. EXECUTIVE asked the experts consulted on these pages which items are most likely to have chemical residues and therefore most important to buy organic; their answers were: tomatoes, cucumbers, squash, lettuce, parsley, strawberries and bell peppers.

Looking ahead

Organic agriculture is not going to solve any of Lebanon’s food security problems any time soon, as right now it represents only a small niche in the overall market. But it is growing fast, and if Western trends are any lesson it is not something to write off. ■

TOO MANY COOKS...

Who's carrying the can over Lebanon's food policy?



Shifting responsibilities over the nation's nutrition give food for thought

Stated with as much trepidation as is needed vis-à-vis any remark regarding an undertaking dependent on the Lebanese government, it is reasonable to assume that there will be a food safety law on the books shortly. And where food safety is concerned, Lebanon has nowhere to go but up.

Currently, the duties performed in other countries by a central body, such as the United States Food and Drug Administration, are being done by a plethora of different ministries with several layers of authority that overlap and collide in a manner that perhaps only Lebanese legislation could have conjured up.

Even industry players and government employees will say that the duties of ensuring food safety are so sporadically spread

throughout the ministries of health, agriculture, interior, industry and economy and trade that coordination is next to impossible. Furthermore, the funds and skilled manpower needed to support activities such as testing products for labeling accuracy are next to nil. The food safety law, which is currently undergoing a revision by several ministers — who have already had at least one extraordinary cross-ministerial meeting as EXECUTIVE goes to print — creates just such an authority.

“In Lebanon in particular [an independent authority] is really important because, the way that it is now, the responsibilities are fragmented among all of the ministers,” said Zeina Kassaify, professor of nutrition and food sciences at the American University of Beirut and president of the Lebanese Association for Food Safety.

The Lebanese Food Safety Authority will theoretically be able to function unhindered by the territorial posturing of the ministries and the glacial pace of cabinet decisions.

Unified authority

The authority will have jurisdiction over the farming, production, makeup, packaging and storage of all food items produced or distributed in Lebanon where and whenever their safety is of concern. The authority will also have control over labeling requirements and investigations into the accuracy of labeling, and will also be in charge of inspecting the supply chains of operators and ensuring that proper records are kept.

The food safety authority will also have the opportunity to make regulations regarding genetically modified food — a controversial issue in Europe and the United States and a legislatively nebulous one in Lebanon.

Advising the authority will be a council of experts from public and private sector organizations such as the Lebanese Standards Institution, the Federation of Lebanese Chambers of Commerce and the Consumer Protection Association.

The authority will be governed by a managing board made up of experts from a variety of existing government offices, which points to perhaps the most radical and the most important structural element of the food safety authority: it belongs to no ministry. The authority falls under the tutelage of the Council of Ministers and receives an allocation in the gov-

ernment’s budget just like any ministry, although it is not subject to oversight by the Civil Service Board or the Central Inspection Board as per the initial draft law.

Though this arrangement may be a good thing where autonomy is concerned, the authority is also at the mercy of the Council of Ministers’ leisurely decision-making schedule, as any measure must be ratified by decree from the Council of Ministers.

The designers of this law have, however, kept emergencies in mind and given the authority the power to take immediate decisions regarding item recalls and import restrictions during times of crisis. These decisions need only be alerted to the Council of Ministers.

Kassaify describes the authority in these cases as a facilitator, linking the ministries under one authority, assigning response work and coordinating information from each ministry.

“An outbreak is not just people getting sick. You have to go follow the source, you have to see who is responsible, you have to go and close down places, you have to follow it in the courts and you have to prevent things from happening again,” she said.

An unknown quantity

If the scheme sounds like it will shake things up within some ministries, it will. And there has been a marked amount of pushback from related ministers who believe that they are losing power and influence by forfeiting some of their responsibilities. As EXECUTIVE went to print, these very ministers were making changes, and only when the law is resubmitted to the Council of Ministers and then moves on to Parliament will we know if its spirit has remained intact.

Kassaify, who was not consulted in the drafting of the law, was a supporter of the original scheme, but is wary about the most recent round of changes and said she could not throw her support behind the new version until she has seen it.

Guidelines and regulations for individual sectors and distribution points will be decided by the authority’s many departments if the original scheme survives, and though the formation of the authority will be a good sign, these will show how serious the government is about making Lebanon a safer place to eat. ■

“An outbreak is not just people getting sick. You have to go follow the source, you have to see who is responsible, you have to go and close down places”