

# Safe produce and market sustainability

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Salutation		SLIDE 1
Explanation	<p>Ladies and gentleman: you are either going to be disappointed or you're going to be relieved:</p> <p>My presentation is not intended to be a lecture about the results of a carefully constructed scientific study – with tables and graphs and considered recommendations – but rather an informal discussion of the personal observations, the answers to simple yet important questions, and the considered inferences (albeit maybe a little subjective) of an ordinary consumer who loves to cook despite his dangerously limited culinary knowledge – with pictures.</p> <p>And hopefully, Mr Chairman, in the process we'll encourage participation from our audience.</p> <p>So, ladies and gentlemen, please feel at ease and free to interrupt at any point and join in the discussion!</p>	
<b><i>Part 1 – It looks good!</i></b>		
The French's love of good food	<p>I often heard it said that you might not love the French, but you have to admit that they know their food:</p> <p>what to eat, when to eat it, how to prepare it and how to enjoy it!</p> <p>It was a Frenchman who said: "To eat is a necessity, but to eat intelligently is an art"</p> <p>Most of the French have always been prepared to skimp on other luxuries, but never on their food: fresh, in season and only the best quality.</p>	SLIDE 2

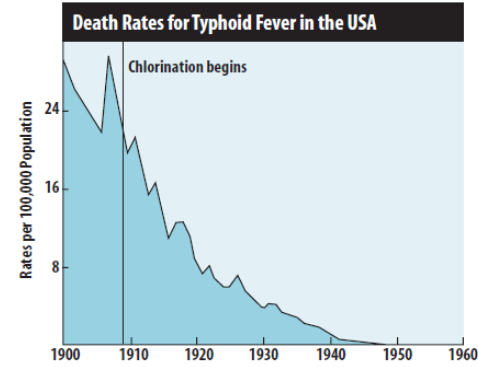
<p>Philippe's visit and the desire to show his culinary skills</p>	<p>Recently I had the task of preparing lunch for a friend and colleague visiting from France. Because it was raining and a bit chilly, I set out to prepare some thick, hot soup using those packets one can buy at the supermarket, with some fresh bread rolls I also bought. At first Philippe said nothing, except that the rolls were good. But when he had finished he said: "I thought you could cook?" He brushed my lame answer aside with: "For dinner, I'll show you how it is done." He scribbled some ingredients on a piece of paper, handed it to me and declared: "French leek and potato soup".</p>	
	<p>Yellow onions? I've never heard of yellow onions. (I know more or less what leeks are from pictures)</p>	<p>SLIDE 3</p>
<p>In search of yellow onions – and other delights</p>	<p>So we set off for a popular retailer nearby that specialises in fresh vegetables and fruit. Philippe not only explained what yellow onions are, but helped me realise that there was a lot about food I didn't know I did not know! For example: an onion is not just an onion <i>(My ignorance exposed)</i> You get white onions and yellow onions, brown onions, sweet onions and shallots red onions and scallions green onions and spring onions leeks, chives and what not . . .</p>	<p>SLIDE 4</p> <p>SLIDE 4 – B</p> <p>SLIDE 5 6 7 8 9 10 11 12 13 14 15</p>
<p>Philippe's remark: "It looks good – but is it safe?"</p>	<p>At some point Philippe looked at me in earnest: "It looks good –", gesturing to all the fresh produce around us: "but is it safe?" We enquired from the floor manager and received a detailed description of how fast his stock moves, that he buys mainly from the Fresh Produce Market, that all produce remaining at closing time are transferred to the cold storage area, how the shop is cleaned daily and the shelves restocked at 4 in the morning (it was a large shop!). We could see that the assortment of "onions" in their neat packages looked clean and hygienic, very fresh and nutritious. But that was not what Philippe meant by "is it safe" – and the floor manager couldn't tell either.</p>	<p>SLIDE 16</p> <p>SLIDE 16 – B</p>
	<p>So we decided to do a little investigation to find out!</p>	<p>SLIDE 17 &amp; 17 – B</p>
<p>Seeing for ourselves</p>	<p>Focusing only on fresh fruit and vegetables, we went to see for ourselves what the situation might be at - One of the large supermarkets - A greengrocer on the corner - A typical street vendor (or hawker) - And some of the consumers</p>	<p>SLIDE 18 SLIDE 19 SLIDE 20 SLIDE 21 22 23</p>
<p>Questions and answers</p>	<p>We asked questions . . . And got some answers . . . and not We talked to storekeepers And we talked to hawkers And we talked to some consumers . . . And our asking questions has become an on-going process</p>	<p>SLIDE 24 24 – A 24 – B 24 – C</p>
	<p>We learned that fresh produce are purchased at the Fresh Produce Market, a place that I've actually never been to before! So we decided to visit one or two of the bigger ones But first we did a bit of googling . . .</p>	<p>SLIDE 25</p>
<p>Visiting websites And then seeing for</p>	<p>We found the following citations from the websites of some of the larger FPMs in SA (we're not going to read through all of them, but notice the emphasised words):</p>	<p>SLIDE 25 - B</p>

ourselves	“Currently, <b>about 5 000 farmers make use of this distribution channel</b> ”	SLIDE 26
	“About <b>1-million tons of fresh produce are traded via the Market every year</b> ”	SLIDE 27
	An “investment that will see <b>the development of a modernised and sophisticated space</b> , which will include efficient trading facilities that will not only <b>result in improved food safety</b> , but a more convenient, pleasant and environmentally friendly market.”	SLIDE 28
	The Market “provides <b>efficient and cost-effective infrastructure</b> and services that comply with <b>international standards.</b> ”	SLIDE 29
	Impressive! It seems the FPMs are alive and well. What we later observed for ourselves seemed to confirm this. I must admit I was surprised, as was many friends I mentioned this to since then!	SLIDE 30
	“Components of the” <b>future market</b> “includes: . . . sophisticated cold chain, <b>food hygiene and safety system . . .</b> ”	SLIDE 31
	“ <b>Market policy</b> with regard to food hygiene is that fresh produce must be handled and treated under <b>hygienic, safe and traceable conditions</b> throughout the supply chain”	SLIDE 32
	This “Market is in the forefront with regard to <b>ensuring that food safety becomes an integral part of overall service</b> in the local fresh produce industry”	SLIDE 33
	“We support the <b>trend towards traceability</b> of fresh produce. We understand the consumers’ need for traceability of fresh produce and commit ourselves to a process whereby <b>fresh produce sold on the” Market “will become traceable</b> ”	SLIDE 34
	The “Fresh Produce Market has been <b>designed according to international food safety standards</b> and incorporates HACCP certified processing facilities. This enables it to provide on-site value adding to agricultural produce.”	SLIDE 35
	It is difficult to tell how much of this have actually been realised or are still in the dream phase.	SLIDE 36
	“ . . . <b>spent R24-million</b> in financial year 2007/08 <b>resurfacing the floor in the trading halls to improve food safety</b> and the levels of hygiene at the Market. The new resurfaced floors have <b>proper drainage to allow for deep cleansing with a ride-on scrubbing machine to attain high levels of food safety.</b> ”	SLIDE 37
	I wonder where the scrubbing machine was that day?	SLIDE 38
	“ . . . implemented a <b>Food Safety Programme</b> to address issues pertaining to the trading environment (maintenance and upgrade of trading halls), cleaning and sanitation, pest control, waste handling and removal, <b>traceability</b> , product quality control, <b>pesticide residue testing, training on food safety</b> and quality.”	SLIDE 39

	The “Market distinguishes itself by the following <b>norms</b> : Discipline Transparency Accessibility <b>Ethic standards</b> Co-operation”	SLIDE 40
	If all of these claims and statements are true and maintained, it is really something to be applauded!	SLIDE 41
	We were deeply interested in the following citations . . .	SLIDE 42
	“Our Food Safety Programme is supported by <b>state-of-the-art in-house laboratory to test the level of pesticide residues</b> on produce sold through our trading halls. Having the lab on site <b>help produce results quickly and improve general response.</b> ”	SLIDE 43
	“ <b>Once a week, random samples are taken</b> regularly from a <b>variety of fresh produce and sent to laboratory</b> for testing to ensure that the produce that ends up on the dinner table is <b>safe for human consumption.</b> ”	SLIDE 44
	“the produce has gone through <b>rigorous inspection and testing and is fit for consumption.</b> ”	SLIDE 45
	Being chemists we were ready to check it out! -- Especially the following claim:	SLIDE 46
	“The Market is the only one in the country with such an in-house facility which is <b>fully equipped, with a full-time laboratory technician</b> who carries out random tests analysis of fresh produce <b>to establish chemical residue levels</b> of the products. “	SLIDE 47
	Note the singular! – poor guy: he must have a lot on his hands!	
	. . . and then we came upon the following:	SLIDE 48
	“The <b>tests are done</b> to ensure that the produce that end up on the dinner table <b>is safe for consumption</b> and that the buyer can buy with a peace of mind. <b>Just one of the reasons you should buy at” this market.</b>	SLIDE 49
	Is this the real reason – marketing and promoting?	SLIDE 49 – B
A quote from another source:	We found a leaflet on the benefits of healthy eating: “ <b>Drink lots of clean, safe water</b> ” with a note added: “ <b>while bottled water is a convenient choice, tap water in South Africa is currently considered clean and safe to drink.</b> ”	SLIDE 50
	But not a word about safe food!	SLIDE 51
Questions and answers	Then we visited two of the largest FPMs in South Africa . . . and continued asking questions: We talked to the market agents	SLIDE 52 52 – B
	We contacted the food quality assurance departments at some of the large retailers (who we learned no-longer buys at the FPMs) We spoke to safety auditors and Restaurant operators	52 – C 52 – D 52 – E
What are we learning?	What have we learned thus far?  The picture at the FPMs has changed during the last few years: while reports in 2004 declared that the retail chains are major buyers at FPMs, market agents now (2011) tell a different story. In some FPMs more than 60% in volume is bought by the small shops and informal vendors (or hawkers).	SLIDE 53

	<p>Most (if not all) of the major retail chains now have their own chain of supply, directly from approved producers. The reasons they give are that it is the only way they can be sure of traceability and by regular monitoring they can ensure that the produce coming through their own supply chain is safe.</p>	SLIDE 54
	<p>We listened to producers – growers . . . and there seems to be different views . . .</p>	SLIDE 55
	<p>And we listened to what is being said about end users – the consumers . . . and different perceptions and changing expectations . . .</p>	SLIDE 56
	<p>What we're seeing at the FPMs is that fresh fruit and vegetables generally are accepted from growers mainly on appearance and appeal – with little or no questions asked.</p>	
	<p>There is of course the welcome exception of a producer providing certificates that confirm his concern for food safety. But why does this appear to be the exception rather than the rule?</p>	
	<p>If a large proportion of the buyers at an FPM is small vendors and hawkers who resell the food to consumers who seem to be uninformed and unconcerned (and not part of all the twittering – at least not yet) – seemingly unconcerned about things they cannot see or taste, are we surprised that many market agents and producers trade on the basis of appearance and price alone? That food “safety” only means “clean and fresh” looking? And maybe this phenomenon is still the case for anything most South Africans buy.</p>	
And the consequences?	<p>So the vegetables and fruit most South Africans buy today look good – but is it always safe?</p>	SLIDE 57

<i>Part 2 – But is it safe?</i>		
What does the term “safe food” really mean?	What does the term “safe food” really mean? Perhaps it is easier to define in terms of “unsafe food”:	SLIDE 58
	Microbiological contamination is an ever present risk and has already been presented at this convention: it continuously occurs through contact with air, water, human touch. Since the produce is “carried away” from the market as is, and the throughput (or movement) of the produce is likely to be high, the safety from a microbiological point of view may actually be that it is in the hands of the consumer – in terms of his own preferences, choices and hygiene. And education . . . And financial means . . . By its very nature, microbial contamination spreads rather rapidly through an item until it or its effects can actually be seen.	SLIDE 59
	Chemical contamination will always be difficult to spot because it usually occurs in the parts per million range – like a grain of sand, finely ground and distributed throughout a kilogram of product. But at this level some chemical substances can be highly dangerous – especially if ingested on a continuous basis. Although not seen by the naked eye, chemical contamination can be detected and measured by a good analytical laboratory – even if present at a million times less.	SLIDE 59 – B
Why is food safety important – or not?	Why is food safety important – or not?	SLIDE 60
	Perhaps the best example of recognising a similar problem, doing something about it and bringing about dramatic improvement happened some years ago in the area of water safety.	SLIDE 61
	Abundant, clean water is essential for public health.  In the 1870 – 1880’s scientists demonstrated that micro-organisms can cause disease  The 1890’s saw the first application of chlorine disinfectants to water facilities in England. Disinfection is a chemical process whose objective is to control disease-causing micro-organisms by killing or inactivating them.  Prior to 1908, no municipal water systems in the US were chemically disinfected. Consequently, waterborne diseases caused a heavy toll in illness and death. Without disinfection processes, consumers are at great risk of contracting waterborne diseases.  Chlorination, the most common method of disinfection, was applied for the first time to US municipal water facilities in Jersey City and Chicago in 1908.  By 1918 over 1,000 US cities employed chlorine disinfection and by the early 1960’s more than 19,000 municipal water systems operated throughout the US.	61 – B  61 – C         SLIDE 62 62 - B


	<p>The figure shows the decline in the death rate due to <u>typhoid</u> fever following the introduction of chlorine disinfection in the US. Death rates due to <u>cholera and hepatitis A</u> also declined dramatically.</p>	<p>SLIDE 63</p>
	 <p>Source: US Centers for Disease Control and Prevention, Summary of Notifiable Diseases, 1997</p>	
	<p>I'm not giving this example to canvas for the continued use of chlorination, but merely to show what a difference can be made if a seemingly invisible problem is addressed with earnest. Fifty years later our knowledge have increased dramatically about chlorination and alternative means of disinfection – but we will not partake in that debate.</p>	
	<p>If safe water is of paramount importance, shouldn't food safety be taken seriously too?</p>	
<p><i>Organically grown</i></p>	<p><i>(Address this aspect only if a pertinent question is asked form the audience)</i></p>	
<p>Is food safety being monitored locally?</p>	<p>Do we know whether our food (and in particular our fresh produce) is safe. If not, do we know the extent of the problem?</p> <p>In other words: Is food safety being monitored?</p> <p>While our export produce are diligently monitored for chemical residues, the same cannot be said of the fresh produce destined for local consumption. The larger food retail chains do have monitoring programmes in place, and one of the large FPM's enjoys its own on-site laboratory, but a very large proportion of our population from all walks of life appears to go completely "unprotected".</p> <p>Fresh produce that moves through the FPMs are analysed for pesticide and other contaminants on an extremely limited scale.</p> <p>The reason?</p>	<p>SLIDE 64</p> <p>64 – B</p> <p>64 – C</p>
<p>Should produce destined for local consumption be monitored more regularly?</p>	<p>Should produce destined for local consumption be monitored more regularly? Depends . . .</p>	<p>SLIDE 65</p>
<p>Can it be monitored locally?</p>	<p>Can it be monitored locally? Yes, the know-how is available in SA. But it is too little and too dispersed. The result is that turnaround times (the time between sampling and analytical results) are mostly way too long.</p> <p>By the time the results are out, the produce has already been consumed!</p> <p>Traceability might be intact until produce is out of the hands of the market agent. And thereafter . . .?</p>	<p>65 – B</p>

	<p>Can and do recalls occur?</p>	
	<p>And recalls are expensive!          And a waste!          It should not have been contaminated in the first place!          Which brings us to Good Agricultural Practice . . .          Which thankfully is not our current topic.</p>	
	<p>Why do managements seem to believe that it is cheaper to set up their own labs than to subcontract to good existing ones?          Running a laboratory is not their core business. Yet they seem willing to dilute their focus by having to attend to training, maintenance, additional financial matters, quality assurance, accreditation . . .</p> <p>Or do they delegate these matters to the analyst that already has an overloaded schedule?</p>	
	<p>And what too often happens in existing laboratories is that freshmen chemical technologists are appointed and expected to operate expensive and sophisticated analytical instruments they probably haven't even seen before;          to start generating results using modern techniques they might not even knew existed.          Limited training is provided, yes, but it usually focuses on a single aspect like the software programme, seldom on the underlying chemical and physical principles and almost never on <b>proper mentoring!</b></p>	
	<p>I'm <i>not</i> referring in particular to the on-site laboratory at one of our FPMs. We visited this laboratory once, and granted, we spent only a half hour or so there.          But the lab manager did seem to know what he was talking about, the instruments were up and running, analysts were busy preparing samples, and results were being generated!</p>	

<p>Can we monitor our fresh produce reliably?</p>	<p>Can the monitoring of our fresh produce be done reliably? Severe criticism of a laboratory often comes from clients that were handed results they did not expect or did not like!</p> <p>And mostly from clients that do not understand residue analysis. How could they if they're not chemical analysts?</p> <p>If you do understand residue analysis you will know that major errors due to inexperience or incompetence are either caused by:</p> <p>Contamination (and finding a particular substance in every sample), or low recoveries (and reporting negative results) – this last kind of error is the kind producers like the most!</p> <p>What we liked about the on-site market laboratory is that it is producing both positive and negative results. And what we liked more is that it seemed that their results are being taken seriously by the powers to be (and not just filed somewhere).</p>	<p>SLIDE 65 – C</p>
<p>So, is our food safe?</p>	<p>So the question remains: “Is our food safe?”</p>	<p>SLIDE 66</p>
<p><b>Part 3 – Does it matter?</b></p>		
<p>Is the fresh produce traded at our FPMs safe?</p>	<p>More particularly: “Is the fresh produce traded at our FPMs safe?”</p> <p>I don't think we really know at this stage! Existing laboratories often detect pesticide residues in random samples. What is of greater concern is that unregistered pesticides are sometimes detected – indicating unlawful agricultural practice!</p>	
<p>Does anybody care?</p>	<p>Does anybody care?</p> <p>If you visit the websites of the larger fresh produce markets, you will be assured that the health of the public is at heart.</p> <p>Is it reality or dream – or worse: marketing strategy?</p> <p>Do the consumers care? We are told that the expectations are changing . . .</p> <p>Do the small buyer and trader (hawker) care?</p> <p>Do the larger buyers care?</p> <p>Which brings us back to the problem of a vastly diverse population: culturally, financially, educationally . . .</p>	<p>SLIDE 66 - B</p> <p>SLIDE 66 - C</p>
<p>Is anybody else doing anything related to food safety at the FPMs?</p>	<p>Is anybody else doing anything related to safe produce at our FPMs? Consumer representatives? Traders? Government? Medical profession?</p>	<p>SLIDE 67</p>
<p>Does it matter?</p>	<p>Does it matter? I don't mean: does it matter if nobody cares – it will always matter!</p> <p>Rather: Does it matter that our fresh produce might not be safe?</p> <p>Discerning (and perhaps opulent) consumers will buy their food from retailers that they believe supply safe food, as they already do despite the price, and demand that the high quality and safety be maintained.</p> <p>The keen observer might find that the vast majority of the South African population, regardless of standing or means, is still guided solely by price and appearance.</p>	<p>67 – B</p>

	It might be a long while before South African consumers at large learn and understand what (un)safe food and its consequences mean, and demand that their food be safe.	67 – C
What do SA's trading partners say?	What do South Africa's trading partners say? Make no mistake: they are aware of the difference between the export and the local markets and are rightly concerned. I've heard it said: If you can't get your own house in order, why should we continue to trade in fresh produce with you?	
	And the best of what we produce is exported . . .	
	And when the price is right . . .	

So why should we care?	Perhaps the answer has more to do with ethics and morals . . .	SLIDE 68
<b><i>Part 4 – Where to now?</i></b>		
	So where to now? Let's ask a last few pertinent questions:	
Generally speaking, is the fresh produce traded on our FPMs safe?	Generally speaking, is the fresh produce traded on our FPMs safe?  If you ask me . . . to be honest: I really don't know . . .	SLIDE 69
If this uncertainty prevails, or we do find that our fresh produce may not be so safe, is the sustainability of the fresh produce markets under threat?	If this uncertainty prevails, or we do find that our fresh produce may not be so safe, is the sustainability of the fresh produce markets under threat?  Again if you ask me: I honestly don't think so . . . at least not in the foreseeable future if the status quo is maintained. There is neither pressure nor incentive, or is there? . . .	SLIDE 70
Are we going to leave it at that?	Are we going to leave it at that?  No! This really is my prayer: No, we cannot leave it at that!  We will have to figure out what to do – too much is at stake . . .	SLIDE 71
Conclusion	Ladies and gentlemen, thank you for your kind attention and participation. We haven't arrived at any answers or solved any problems, but I do have Philippe's recipe for you!	

<p>Did we find yellow onions?</p>	<p>Did we find yellow onions?</p> <p>Yes! I've learned a lot about onions – and other fresh vegetables for that matter. I'm a visual example of: You're never too old to learn.</p> <p>I've also learned a lot about food safety – or, alas, the lack of it in too many instances.</p>	
<p>Philippe's <i>Soupe à l'Oignon</i></p>	<p>Dear friends, provided you can find ingredients that are . . .</p> <p style="text-align: center;">pesticide free hormone free antibiotic free growth stimulant free roaming free . . . feel free</p> <p>to prepare a simple yet really delightful meal:</p> <p><u>Ingredients</u></p> <p>Leeks, white to pale green parts (150 g thinly sliced) Brown onion (75 g thinly sliced) Baking margarine (50 g) Potato (300 g peeled and sliced) Chicken stock (400 ml) Salt to taste Ground black pepper to taste Cream 250 ml Chopped fresh chives to taste</p> <p><u>Procedure:</u></p> <p>Rinse the fresh vegetables with clean running water before use. In a saucepan over medium heat, sauté the sliced leeks and onion in the margarine, stirring constantly, until tender (about 8 minutes). Do not allow them to become brown. Add the chicken broth and sliced potatoes. Bring to the boil, cover, reduce the heat and gently simmer for 30 minutes. Remove from the heat. Using a hand blender or masher, blend the mixture until smooth. Taste and add salt if necessary. Add a little black pepper. Stir in the cream and cool to the desired temperature. Serve hot or cold, garnished with fresh chives.</p>	<p>SLIDE 72</p>
<p>Aspirata</p>	 <p style="text-align: center;">Berkley Office Park, Highveld Techno Park, Centurion South Africa</p> <p style="text-align: center;">www.aspirata.co.za info@aspirata.co.za +27 12 685 0800</p> <p style="text-align: center;">Contact persons: Dr Kobus Nieuwenhuis Ms Paola Dry-Roberts</p>	<p>SLIDE 73</p>