



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Impact of Pesticide Residue Concerns on
Fresh Produce Consumption in the UK**

by

**Andres Silva
Graduate Student
Kent Business School,
University of Kent,
Canterbury, United Kingdom**

**Marian Garcia
Senior Lecturer
Kent Business School,
University of Kent,
Canterbury, UK**

and

**Alastair Bailey
Reader in Agricultural Economics,
Department of Economics,
University of Kent,
Canterbury, United Kingdom**

***Selected Paper prepared for presentation at the Agricultural & Applied Economics
Association's 2010 AAEA, CAES & WAEA Joint Annual Meeting, Denver, Colorado,
July 25-27, 2010.***

*Copyright 2010 by Andres Silva, Marian Garcia and Alastair Bailey. All rights reserved.
Readers may make verbatim copies of this document for non-commercial purposes by any
means, provided this copyright notice appears on all such copies*

Impact of Pesticide Residue Concerns on Fresh Produce Consumption in the UK

Andres Silva (as454@kent.ac.uk), Marian Garcia (m.garcia@kent.ac.uk) and Alastair Bailey (a.bailey@kent.ac.uk), University of Kent, Canterbury, United Kingdom

Pesticide residues in fresh produce are a major consumer concern (Keikothaile et al., 2010). After food poisoning, the presence of chemical substances (toxics and pesticides) is the main food concern among European Union citizens; above obesity and genetically modified food concerns (EC, 2006). In the United Kingdom (UK), out of 2,309 samples of fruit and vegetables tested, pesticide residues were detected in 66.4% of the cases (PRC, 2008).

Objective

Academic research has focused on determining the willingness to pay for pesticide-free products rather than estimating demand conditions. There is no evidence to indicate whether the stated preference has translated into revealed preferences, and there is insufficient demand information to tailor a communication campaign to minimise potential negative effects.

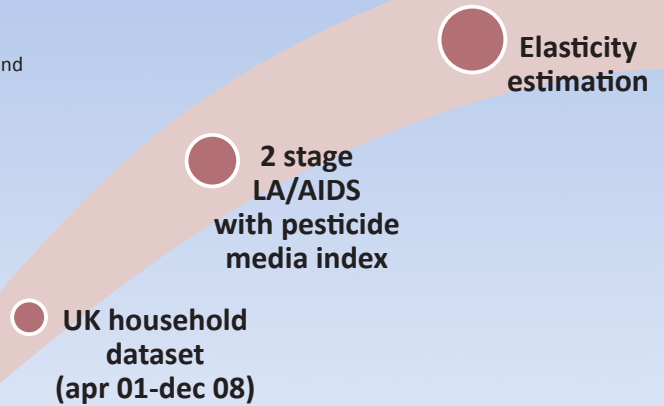
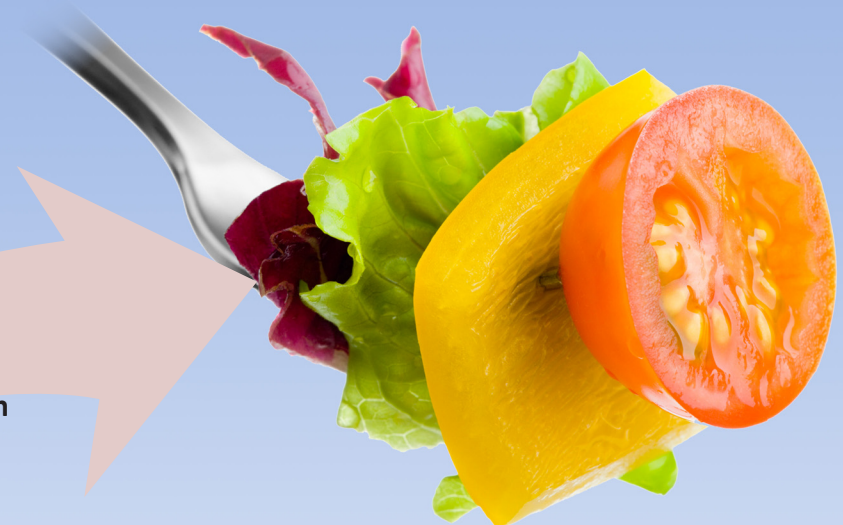
We estimate the impact of pesticide news among UK households, upon healthy eaten patterns, with respect to changes in food consumption.

Dataset and Methodology

We use the Living Costs and Food Survey dataset (formerly Expenditure and Food Survey) that involves more than six thousands households per year. For two weeks, households keep a diary including food eaten outside, at home, homegrown and free food.

Using Nexis engine, we utilise as a proxy of pesticide concerns the newspaper hits per month, with the keywords: fruit and vegetable or produce and pesticide.

Assuming weak separability, we use the Paasche index to aggregate over categories. The elasticity estimation for a two stage demand system is presented in Carpentier and Guyomard (2001).



Results

Summary SUR estimation

		Parameters		
Stage 1		R ²	Total*	Significant (95%)
	Food	0,89	15	8
	Personal	0,50	15	5
Stage 2				
	Fresh Produce	0,79	17	11
	Processed F&V	0,47	17	9
	Meat and Dairy	0,60	17	13
	Fat and Carb	0,64	17	10

(*) It includes a set of monthly dummy variables and a linear trend.

Unconditional Uncompensated Elasticities

	Stage 1	Food	Personal	Home and Transport	Expenditure	Media Index		
Food		-0,82	0,03	0,78	0,55	0,000009		
Personal		-0,10	-1,28	1,24	1,31	-0,000066		
Home and Transport		0,20	1,08	-1,27	0,91	0,000046		
Stage 2		Fresh Produce	Processed F&V	Meat and Dairy	Carb and Fat	Other Food	Expenditure	Media Index
Fresh Produce		-0,93	-0,0050	0,01	-0,01	0,98	0,51	-0,00016
Processed F&V		0,01	-1,10	0,03	0,08	1,04	0,57	0,00004
Meat and Dairy		0,01	0,0021	-0,98	-0,0028	1,01	0,54	0,00013
Fat and Carb		-0,0026	0,04	-0,01	-0,99	1,01	0,54	0,00026
Other Food		0,23	0,14	0,55	0,27	-1,15	0,58	-0,00011

Conclusions

As a result of pesticide news, UK householders have changed their consumption patterns. Firstly, households do not vary their overall food expenditure much. Secondly, fresh produce are substituted by carbs and fats, and in less degree, by meat and dairy. Thirdly, processed fruit and vegetables are less sensitive to pesticide news and do not vary their expenditure much. Consequently, the evidence shows that as a result of pesticide news UK households are eating a less healthy diet.

References

Carpentier, A., and H. Guyomard. 2001. "Unconditional Elasticities in Two-Stage Demand Systems: An Approximate Solution." American Journal of Agricultural Economics 83, no. 1: 222-229
 EC. 2006. "Risk Issues." European Commission. Available online at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_238_en.pdf
 Keikothaile, B. M., P. Spanoghe, and W. Steurbaut. 2010. "Effects of Food Processing on Pesticide Residues in Fruits and Vegetables: A Meta-Analysis Approach." Food and Chemical Toxicology 48, no. 1: 1-6
 Pesticide Residues Committee. 2008. "Annual Report." Pesticide Residues Committee. Available online at: <http://www.pesticides.gov.uk/prc.asp?id=2536>