

Software Project regarding the Appearance and Evidence of New Romanian Organic Products

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Abstract

Open source options for software development offer ways to get software projects done during the current brutal economic climate by providing community-based resources and saving users from paying licensing fees. Open-source applications are gaining more approval in enterprises, particularly in the areas of operating systems, infrastructure applications and development tools. In this paper, authors demonstrate how a web database application can be developed with the triad of PHP, MySQL, the Apache web server and ScriptCase, a complete PHP code generator. This software project is proposed for the Ministry of Agriculture and Rural Development Romania (MARD) and it manages the information about Romanian organic products. The program, which can be implemented nationally, keeps an evidence of the assortment and the emergence of new organic products, production and marketing channels of organic food products in Romania.

Key words: *organic products, assortment of organic products, organic operator, open source software, internet based databases*

JEL Classification: *C82, C88, Q56, Q57*

Introduction

The need for designing this program lies in the fact that currently in Romania, there is no detailed statistical data on the assortment and quantity of Romanian organic food products. MARD is the responsible authority for organic farming in Romania. Operators, which activate in this area, are required to register their business annually, according to the type of organic operator, organic areas, organic production estimates, and type of organic production.

The ministry's website lists¹ are available with all registered operators in organic farming in Romania, assigned to counties according to their type (producers, traders, processors, importers, exporters) and type of organic production (crops, the livestock, beekeeping, snail farming). The program aims to highlight new Romanian organic products, but also their quality characteristics, thus being also a form of promoting them.

¹ [www.madr.ro/agricultura ecologica](http://www.madr.ro/agricultura_ecologica)

Computer Program Description

The program proposes a national prompt and professional evidence of assortment and quantity of organic agricultural products produced and marketed in Romania, tracking the emergence of new organic products. The program can be implemented in the MARD, as a complement to existing database on registered organic operators using existing documents currently required by "Record sheets in organic farming".

With the computer program "Romanian organic products", all actors involved in organic food production system can access information on the nomenclature of organic food products produced and commercialized in Romania, the new organic products emerged, the quantities produced, the types of their marketing channels.

Initially operators (producers and processors) are required to report their existing assortment of organic products, following that every time there is a new organic product, to register the new organic product in the program. In addition, until the end of the quarter, operators are obliged to record in the program data on production and commercialisation of organic products.

Open-Source Tools for Development of Internet-Based Database Applications

At the moment, the triad of PHP, MySQL, and the Apache web server is one of the most popular web development platforms. There are several good reasons for PHP's popularity as a web scripting language: it is easy to include PHP scripts in HTML documents, PHP is free in a monetary and open source sense, it has over a hundred function libraries, and it shares syntax with C or Perl-like languages.

The focus of this program is the web architecture since it is the most common architecture in which MySQL (DBMS software) is used.

The easy approach to getting started in a Microsoft Windows environment is to use an installation package that includes Apache, PHP, and MySQL and we used the PHP Triad for Windows².

Afterwards, the ScriptCase, a complete PHP code generator must be installed. Through a friendly interface, the ScriptCase creates web applications extremely fast with quality and team integration, saving time, lowering costs and increasing productivity. ScriptCase supports most used databases, like Oracle, DB2, MS SQLServer, MySQL, PostgreSQL, Sybase, MS Access and more.

The application source code is PHP and JavaScript and uses AJAX technology. The applications run completely independent from the tool and are compatible with Windows, Unix, AS/400 and other systems. The software development was made directly through the browser, also allowing team integration in a distributed environment.

The advantages of using such an instrument are:

- saving time and reducing costs;
- portability and distributed development (ScriptCase is a web application that allows portability and integration for the development team. Using server side platform, ScriptCase allows the team to develop only using the browser (IE, Firefox). It reduces development cost);
- development focused on priority required by the beneficiaries of the product;

² <http://sourceforge.net/projects/phptriad/>

- fast learning using the knowledge base, on-line support, forum, samples video and systems you will learn ScriptCase quickly. Building WEB applications will not be a difficult task anymore.

The first step in achieving this computer product was to create the database (Figure 1). This application was created using phpMyAdmin, also included in the same triad, and accessed through URL <http://localhost/phpmadmin>.



The screenshot shows the phpMyAdmin interface for a database named 'produse_ecologice'. On the left is a tree view of the database structure, and on the right is a table listing the tables and their properties.

Tabel	Actiune	Inregistrari	Tip	Marime
<input type="checkbox"/> comercializari	Navigare Selecteaza Inserare Atribute Arunca Goleste	8	MyISAM	3.3 KB
<input type="checkbox"/> comercianti	Navigare Selecteaza Inserare Atribute Arunca Goleste	4	MyISAM	3.3 KB
<input type="checkbox"/> nomenclator_produse	Navigare Selecteaza Inserare Atribute Arunca Goleste	39	MyISAM	6.0 KB
<input type="checkbox"/> operatori	Navigare Selecteaza Inserare Atribute Arunca Goleste	7	MyISAM	4.0 KB
<input type="checkbox"/> organism_inspectie	Navigare Selecteaza Inserare Atribute Arunca Goleste	15	MyISAM	3.9 KB
<input type="checkbox"/> productie	Navigare Selecteaza Inserare Atribute Arunca Goleste	12	MyISAM	3.4 KB
<input type="checkbox"/> produse	Navigare Selecteaza Inserare Atribute Arunca Goleste	12	MyISAM	84.9 KB
<input type="checkbox"/> tip_comercianti	Navigare Selecteaza Inserare Atribute Arunca Goleste	2	MyISAM	3.2 KB
<input type="checkbox"/> tip_operatori	Navigare Selecteaza Inserare Atribute Arunca Goleste	2	MyISAM	3.0 KB
<input type="checkbox"/> valori_nutritive	Navigare Selecteaza Inserare Atribute Arunca Goleste	7	MyISAM	3.4 KB
10 tabele	Sum	108	--	118.4 KB

Fig. 1. The structure of database „Produse_ecologice”

The Solution Chosen

For easy access and easy management, in order to implement this software it was chosen a solution on-line, based on a web page server and database on the one hand, and the operators connected to the server via the Internet or intranet on the other side.

Access is via the browser, and all information is on the central server. The application structure on the first page is arborescent with roots, where you can activate all the functions of the platform (Figure 2).

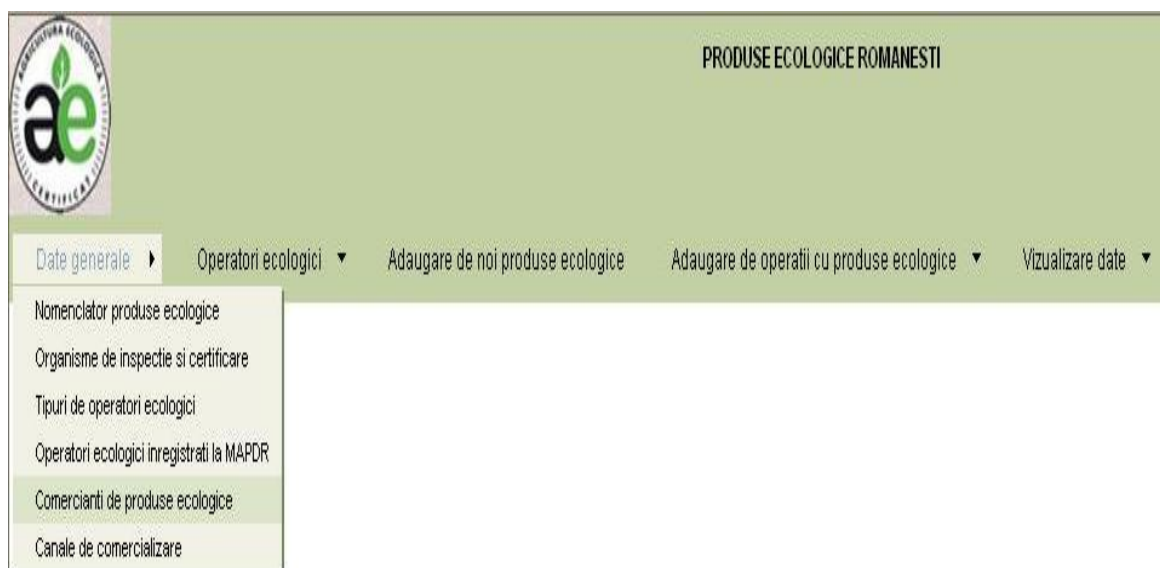


Fig 2. Main menu of program

How to Use Computer Program

In order to use the program one must follow these *steps*:

- General data

Access is gained from the top menu, where you can access general information, introduced by the program manager from MARD existing database as follows:

- *Nomenclature of organic products.* You can view the list of codes, classes and types of organic production, raising the possibility of adding new ones (New) and update (Update).
- *Inspection and certification bodies.* You can view all inspection and certification bodies (code and name) accredited in Romania, with the possible addition of new ones (New) and update (Update).
- *MARD registered organic operators.* You can view all registered organic operators. There is the possibility of selecting the type of organic operator (producer/processor), but also sorting them in the alphabetical order of the name of the operator, the locality, district (figure 3).
- *Retailers of organic products.* You can view all traders of organic products by name, type of trader, with the possible addition of new ones (New), and update (Update).
- *Marketing channels:* conventional store or specialized organic store.



Operatori ecologici inregistrați la MAPDR							
Nume operator ecologic	Localitate	Judet	E-mail	Adresa	Telefon	Pagina Web	Tipul de operator ecologic
SC ESCAR PROD SCA	Teliu	Brasov	contact@escarprod.ro	Str. Alexandru Petofi nr. 1	0268-518415	http://www.escarprod.ro	procesator
SC LA DORNA LACTATE SA	Vatra Domei	Suceava	contact@ladorna.ro	Str.Calea Transilvaniei Nr.40	0230-575181	http://www.ladorna.ro	procesator
SC CAMYLACT SRL	Vatra Domei	Suceava	camylact@k.ro	Str.George Cosbuc Nr.1	0230-375106		procesator
SC TREMOT DOBRE SI FII SRL	Baicoi	Prahova	tremot_honey@yahoo.com	Str.Republicii Nr.360	0244-268288	http://www.tremot.ro	procesator
SC PETRAS BIO SRL	Deva	Hunedoara	petras@petrasbio.ro	Strada Ghe. Lazar nr. 16	0723396304	http://www.petrasbio.ro	procesator
SC INEDIT SRL	Arges	Arges		Str.Principala, Nr.708	0248-265095		procesator

Fig 3. Page regarding to registered organic operators

- Organic operators

Access is gained from the top menu and allows adding new organic operators (Insert). Required fields are the operator's name, selection of the organic operator (producer/processor) and selection of the inspection and certification body.

- Adding new organic products

Access is gained from the top menu. Initially all organic operators must insert in the program the existing assortment of organic products. Every time there is a new organic product, the organic operator introduces new organic product name, selects the class of products from the nomenclature of the organic products, introduces the term of validity, uploads product photo, enters the unit, the list of ingredients, the identification lot, the packaging type, the initial stock, the standard and nutritional value (Figure 4).


First Previous Next Last Exit																	
Denumirea produsului ecologic *	Lapte ecologic UHT 0.1%																
Clasa de produse ecologice *	Lapte																
Termenul de valabilitate	6 luni																
Fotografia produsului ecologic	 <input type="text"/> Browse... <input type="checkbox"/> Delete this record																
Unitatea de masura	litru																
Lista ingredientelor	lapte ecologic de vaca																
Lotul de identificare	12567/2009																
Modul de ambalare	cutie tetra pack - 1l																
Stocul initial	0																
Standardul	SR 143:2008																
First Previous Next Last																	
Valoare nutritiva	<table border="1"> <thead> <tr> <th></th> <th>Valoare energetica</th> <th>Proteine</th> <th>Glucide</th> <th>Lipide</th> <th>Vitamine</th> <th>Elemente minerale</th> <th>Produs ecologic</th> </tr> </thead> <tbody> <tr> <td></td> <td>32 kcal</td> <td>3,2 g</td> <td>4,5 g</td> <td>0,1 g</td> <td></td> <td>Ca: 120 mg</td> <td>Lapte ecologic UHT 0.1%</td> </tr> </tbody> </table>		Valoare energetica	Proteine	Glucide	Lipide	Vitamine	Elemente minerale	Produs ecologic		32 kcal	3,2 g	4,5 g	0,1 g		Ca: 120 mg	Lapte ecologic UHT 0.1%
	Valoare energetica	Proteine	Glucide	Lipide	Vitamine	Elemente minerale	Produs ecologic										
	32 kcal	3,2 g	4,5 g	0,1 g		Ca: 120 mg	Lapte ecologic UHT 0.1%										

Fig. 4. Adding organic products in the program

- Adding operations with organic products: Production and Commercialization

During a quarter, the organic operator is required to introduce both the obtained and the sold organic production by the date of achievement and the sale date (Figure 5).

First Previous Next Last Exit				
Hume operator ecologic	Denumire produs ecologic	Cantitate produsa	Data fabricatiei	Lotul de identificare
SC LA DORNA LACTATE SA	Lapte ecologic UHT 0.1%	100.00	01/08/2009	12587/2009
SC LA DORNA LACTATE SA	Lapte ecologic UHT 1,5%	100.00	02/03/2009	1279/2009
SC LA DORNA LACTATE SA	Crema bio branza tartinabila	500.00	02/01/2009	1899/2009
SC LA DORNA LACTATE SA	Schweitzer ecologic	200.00	03/04/2009	7896/2009
SC CAMYLACT SRL	Cascaval Argesel afumat ecologic	500.00	03/09/2009	592/2009
SC TREMOT DOBRE SI FII SRL	Miere bio poliflora	100.00	02/10/2009	4596/2009
SC TREMOT DOBRE SI FII SRL	Sirop ecologic de catina cu miere	100.00	03/15/2009	1568/2009
SC CORTINA BIOPROD SRL	Oua ecologice	200.00	03/16/2009	1590/2009
SC INEDIT SRL	Pate bio vegetal Halvet cu ardei	500.00	07/07/2009	1798/2009
SC ESCAR PROD SCA	Melci ecologici	200.00	04/06/2009	187/2009
		New	Update	

Fig. 5. Adding operation with organic products in the program

- Reports

- *The assortment of the Romanian organic products.* You can view all assortment of organic product structured by name, product class, operator name, term of validity, list of organic ingredients, packaging (Figure 6).

Sortimentul produselor ecologice romanesti						
Nr.crt.	Denumirea produsului ecologic	Clasa de produse ecologice	Operator ecologic	Termenul de valabilitate	Lista ingredientelor	Modul de ambalare
1	Lapte ecologic UHT 0.1%	Lapte	SC LA DORNA LACTATE SA	6 luni	lapte ecologic de vaca	cutie tetra pack - 1l
2	Lapte ecologic UHT 1,5%	Lapte	SC LA DORNA LACTATE SA	6 luni	lapte de vaca ecologic	cutie tetra pack - 1l
3	Crema bio branza tartinabila	Produse lactate (branzeturi, produse acidofile, unt, smantana)	SC LA DORNA LACTATE SA	3 luni	lapte de vaca pasteurizat ecologic, smantana ecologica pasteurizata, culturi lactice selectionate, sare, stabilizatori: guma de guar, guma locust	cutie plastic - 125 g
4	Schweitzer ecologic	Produse lactate (branzeturi, produse acidofile, unt, smantana)	SC LA DORNA LACTATE SA	10 luni	lapte crud ecologic 17%, lapte pasteurizat ecologic	folie termocontractibile 200 g
5	Cascaval Argesel afumat ecologic	Produse lactate (branzeturi, produse acidofile, unt, smantana)	SC CAMYLACT SRL	12 luni	lapte de vaca ecologic crud de vaca prin oparirea casului	folie termocontractibile 200 g
6	Miere bio poliflora	Miere	SC TREMOT DOBRE SI FII SRL	12 LUNI	miere ecologica poliflora	borcan - 500 g
7	Sirop ecologic de catina cu miere	Alte preparate si conserve pe baza de fructe	SC TREMOT DOBRE SI FII SRL	12 luni	pulpa ecologica de catina, miere ecologica de salcam	sticla - 1 l
8	Oua ecologice	Oua	SC CORTINA BIOPROD SRL	21 zile	Oua ecologice	cutie carton - 20 buc
10	Melci ecologici	Melci, pesti	SC ESCAR PROD SCA	2 luni	melci ecologici	borcan sticla - 200 g
11	Spirale ecologice	Paste alimentare	SC PETRAS BIO SRL	12 luni	faina ecologica integrala din spelta	punga - 500g
9	Pate bio vegetal Halvet cu ardei	Altele	SC INEDIT SRL	6 luni	apa, drojdie, ulei floarea soarelui ecologici, fulgi de cartofi ecologici, ardei rosu ecologici, pasta tomate ecologice, condimente ecologice	cutie carton - 50 g
12	Grau ecologic	Cereale si plante industriale	SC PETRAS BIO SRL	12 luni	grau ecologic	punga - 500 g

Fig. 6. Page regarding to the assortment of Romanian organic products

- *List of organic products grouped by categories of organic products and operators.* Select organic class product and/or organic operator to view a class of organic products and/or all organic products of an operator (Figure 7).

Selectati clasa de produse ecologice / operatorul ecologic	
Clasa de produse ecologice	Produse lactate (branzeturi, produse acidofile, unt, smantana)
Operator ecologic	
<input type="button" value="Search"/> <input type="button" value="Clear"/> <input type="button" value="Edit"/> <input type="button" value="Exit"/>	
Lista produselor ecologice	
Denumirea produsului ecologic	Clasa de produse ecologice
Crema bio branza tartinabila	Produse lactate (branzeturi, produse acidofile, unt, smantana)
Schweitzer ecologic	Produse lactate (branzeturi, produse acidofile, unt, smantana)
Cascaval Argesel afumat ecologic	Produse lactate (branzeturi, produse acidofile, unt, smantana)
	Operator ecologic
	SC LA DORNA LACTATE SA
	SC LA DORNA LACTATE SA
	SC CAMYLACT SRL
First	Previous
Next	Last
[1 to 3 of 3]	
Go to	1
View	15

Fig. 7. Page regarding to the list of organic products

- *New assortment of organic products appeared in a period.* Select a time to view the new appeared assortment of organic products (Figure 8).

Sortimentul nou de produse ecologice aparut in perioada aleasa									
Columns	Sorting	PDF	XLS	XML	CSV	RTF	Print		
Selectati perioada		<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Data fabricatiei</u>			
Perioada		Schweitzer ecologic		SC LA DORNA LACTATE SA		03/04/2009			
03 01 2009		Cascaval Argesel afumat ecologic		SC CAMYLACT SRL		03/09/2009			
03 31 2009		Sirop ecologic de catina cu miere		SC TREMOT DOBRE SI FII SRL		03/15/2009			
Search Clear Edit Exit		Oua ecologice		SC CORTINA BIOPROD SRL		03/16/2009			
		Grau ecologic		SC PETRAS BIO SRL		03/12/2009			
First	Previous	Next	Last	[1 to 5 of 5]					

Fig. 8. Page regarding to new assortment of organic products appeared in a period

- *Amount of organic products made by classes of organic products.* Select class to view the production of organic products (Figure 9).

Cantitatea realizata de produse ecologice pe clase de produse										
Search	Columns	Sorting	Summary	PDF	XLS	XML	CSV	RTF	Print	Exit
Clasa de produse ecologice:Cereale si plante industriale										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Grau ecologic		SC PETRAS BIO SRL		100.00	bucata	punga - 500 g				
TOTAL				100.00						
Clasa de produse ecologice:Miere										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Miere bio poliflora		SC TREMOT DOBRE SI FII SRL		100.00	bucata	borcan - 500 g				
TOTAL				100.00						
Clasa de produse ecologice:Oua										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Oua ecologice		SC CORTINA BIOPROD SRL		200.00	bucata	cutie carton - 20 buc:				
TOTAL				200.00						
Clasa de produse ecologice:Lapte										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Lapte ecologic UHT 0.1%		SC LA DORNA LACTATE SA		100.00	litru	cutie tetra pack - 1l				
Lapte ecologic UHT 1,5%		SC LA DORNA LACTATE SA		100.00	litru	cutie tetra pack - 1l				
TOTAL				200.00						
Clasa de produse ecologice:Alte preparate si conserve pe baza de fructe										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Sirop ecologic de catina cu miere		SC TREMOT DOBRE SI FII SRL		100.00	litru	sticla - 1 l				
TOTAL				100.00						
Clasa de produse ecologice:Melci, pesti										
<u>Denumirea produsului ecologic</u>		<u>Operator ecologic</u>		<u>Cantitatea produsa</u>	<u>Unitate de masura</u>	<u>Mod de ambalare</u>				
Melci ecologici		SC ESCAR PROD SCA		200.00	bucata	borcan sticla - 200 g				
TOTAL				200.00						

Fig. 9. Page regarding to amount of organic products made by classes of organic products

Conclusions

Technology still drives the new economy, the e-economy. The Internet - with the software and communication technologies that drive it - keeps changing everything. Evolving business needs and technology innovations are driving continuous changes in every aspect of the software delivery industry as a whole.

Developing a Web database application based on the open source software is a MARD recommended proposal to easy access to all information related to organic products in Romania.

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Program informatic privind urmărirea apariției și evidența noilor produse ecologice din România

Rezumat

Soluțiile open-source pentru dezvoltarea de produse software oferă modalitatea de a obține, cu costuri reduse, proiecte software în contextul situației economice actuale. Aplicațiile open-source câștigă tot mai mult teren în domeniul economic și - în particular - în domeniul sistemelor de operare, infrastructurii și instrumentelor de dezvoltare. În acest articol, autorii demonstrează cum poate fi realizată o aplicație web tip bază de date folosind triada PHP, MySQL, serverul Web Apache și softul ScriptCase, un generator complet de cod PHP. Acest proiect informatic este propus pentru Ministerul Agriculturii și Dezvoltării Rurale (MADR), gestionând informații despre produsele ecologice românești. Programul, care se poate implementa la nivel național, realizează o evidență clară a sortimentului și apariției de noi produse ecologice, a producției și canalelor de comercializare a produselor agroalimentare ecologice din România.