

UNIVERSITATEA TEHNICA "GHE. ASACHI" IASI

Programul:	IDEI
Tipul proiectului:	Proiecte de cercetare exploratorie
Cod proiect:	ID_320

BAZA DE DATE

DENUMIREA PROIECTULUI:

SPECTROSCOPIA DIELECTRICA DE BANDA LARGA, CA METODA COMPARATIVA, NEDISTRUCTIVA SI NEINVAZIVA DE DETERMINARE A COMPUSILOR CU POTENTIAL DE RISC DIN PRODUSELE ALIMENTARE

2009

Alcatuirea bazei de date pentru o serie de cel puțin 10 produse alimentare din fiecare clasa

In urma măsurătorilor efectuate cu ajutorul analizorului dielectric pe alimente precum - vinuri, lactate fructe si legume - s-au putut extrage numeroase date experimentale care pot da informații viabile despre caracteristicile dielectrice ale fiecărui grup de alimente, si **s-a alcătuit o baza de date in forma tabelara.**

O sinteza din aceasta baza de date este prezentata mai jos.

Tabelul 1. Valori ale Constantei dielectrice si tg. Delta funcție de frecvența la anumite temperaturi (20,30,40 °C) pentru categoria de produse *vinuri*

Categorie	Vinuri	Temperatura (°C)	Constanta Dielectrică			Tg Delta		
			Frecvența			Frecvența		
			50Hz	1 kHz	1 MHz	50Hz	1kHz	1 MHz
Dealurile Moldovei 10.5%		20	6.41E+05	3.32E+04	1.21E+02	2.69E+00	4.23E+00	1.74E+00
		30	8.08E+05	4.49E+04	1.39E+02	2.79E+00	4.07E+00	2.01E+00
		40	9.64E+05	5.77E+04	1.63E+02	2.98E+00	3.96E+00	2.20E+00
Pelin Alb 10%		20	6.44E+05	3.34E+04	1.22E+02	2.71E+00	4.25E+00	1.75E+00
		30	8.12E+05	4.51E+04	1.40E+02	2.81E+00	4.09E+00	2.02E+00
		40	9.69E+05	5.79E+04	1.64E+02	2.99E+00	3.98E+00	2.21E+00
Muscat Otonel 10.5%		20	6.46E+05	3.35E+04	1.22E+02	2.71E+00	4.26E+00	1.75E+00
		30	8.14E+05	4.52E+04	1.40E+02	2.81E+00	4.09E+00	2.03E+00
		40	9.71E+05	5.81E+04	1.64E+02	3.00E+00	3.98E+00	2.22E+00
Feteasca Alba 10.5%		20	6.43E+05	3.33E+04	1.22E+02	2.70E+00	4.24E+00	1.74E+00
		30	8.11E+05	4.50E+04	1.39E+02	2.80E+00	4.08E+00	2.02E+00
		40	9.67E+05	5.78E+04	1.63E+02	2.99E+00	3.97E+00	2.21E+00
Feteasca Regala 10.5%		20	6.42E+05	3.33E+04	1.22E+02	2.70E+00	4.24E+00	1.74E+00
		30	8.10E+05	4.49E+04	1.39E+02	2.80E+00	4.07E+00	2.02E+00
		40	9.66E+05	5.78E+04	1.63E+02	2.98E+00	3.96E+00	2.20E+00
Muscat Otonel DOC 11%		20	6.47E+05	3.35E+04	1.22E+02	2.72E+00	4.27E+00	1.75E+00
		30	8.15E+05	4.52E+04	1.40E+02	2.82E+00	4.10E+00	2.03E+00
		40	9.72E+05	5.81E+04	1.64E+02	3.00E+00	3.99E+00	2.22E+00
Feteasca Alba DOC 11%		20	6.40E+05	3.32E+04	1.21E+02	2.69E+00	4.22E+00	1.73E+00
		30	8.07E+05	4.48E+04	1.39E+02	2.79E+00	4.06E+00	2.01E+00
		40	9.62E+05	5.75E+04	1.63E+02	2.97E+00	3.95E+00	2.20E+00
Chardonnay 10.8%		20	6.38E+05	3.31E+04	1.21E+02	2.68E+00	4.21E+00	1.73E+00
		30	8.04E+05	4.46E+04	1.38E+02	2.78E+00	4.04E+00	2.00E+00
		40	9.59E+05	5.74E+04	1.62E+02	2.96E+00	3.94E+00	2.19E+00
Cabernet Savignon 12%		20	6.37E+05	3.30E+04	1.20E+02	2.67E+00	4.20E+00	1.73E+00
		30	8.03E+05	4.45E+04	1.38E+02	2.77E+00	4.04E+00	2.00E+00
		40	9.57E+05	5.73E+04	1.62E+02	2.96E+00	3.93E+00	2.19E+00
Vin de		20	6.48E+05	3.36E+04	1.23E+02	2.72E+00	4.27E+00	1.75E+00

Masa 9%	30	8.16E+05	4.53E+04	1.40E+02	2.82E+00	4.11E+00	2.03E+00
	40	9.74E+05	5.82E+04	1.65E+02	3.01E+00	3.99E+00	2.22E+00

Tabelul 2. Valori ale Constantei dielectrice si tg. Delta funcție de frecvența la anumite temperaturi (20,30,40 °C) pentru categoria de produse *fructe si legume*

Categorie	Fructe si Legume	Temperatura (°C)	Constanta Dielectrică			Tg Delta		
			Frecvența			Frecvența		
			25 MHz	40 MHz	900 MHz	25 MHz	40 MHz	900 MHz
Măr (Galben Delicios)	20	7.25E+01	7.26E+01	7.43E+01	1.81E+00	1.82E+00	1.86E+00	
	30	7.13E+01	7.13E+01	7.23E+01	1.78E+00	1.78E+00	1.81E+00	
	40	6.97E+01	6.96E+01	7.00E+01	1.74E+00	1.74E+00	1.75E+00	
Măr (Roșu Delicios)	20	7.46E+01	7.47E+01	7.70E+01	1.87E+00	1.87E+00	1.93E+00	
	30	7.27E+01	7.28E+01	7.45E+01	1.82E+00	1.82E+00	1.86E+00	
	40	7.06E+01	7.08E+01	7.15E+01	1.77E+00	1.77E+00	1.79E+00	
Migdale	20	5.90E+00	5.90E+00	1.70E+00	1.48E-01	1.48E-01	4.25E-02	
	30	5.70E+00	5.90E+00	3.20E+00	1.43E-01	1.48E-01	8.00E-02	
	40	5.80E+00	6.10E+00	3.30E+00	1.45E-01	1.53E-01	8.25E-02	
Cireșe	20	9.12E+01	8.50E+01	7.37E+01	2.28E+00	2.13E+00	1.84E+00	
	30	9.14E+01	8.40E+01	7.20E+01	2.29E+00	2.10E+00	1.80E+00	
	40	9.10E+01	8.24E+01	6.96E+01	2.28E+00	2.06E+00	1.74E+00	
Grefă	20	8.90E+01	8.27E+01	7.27E+01	2.23E+00	2.07E+00	1.82E+00	
	30	9.03E+01	8.19E+01	7.08E+01	2.26E+00	2.05E+00	1.77E+00	
	40	9.19E+01	8.14E+01	6.85E+01	2.30E+00	2.04E+00	1.71E+00	
Portocală	20	8.40E+01	8.10E+01	7.29E+01	2.10E+00	2.03E+00	1.82E+00	
	30	8.22E+01	7.85E+01	7.06E+01	2.06E+00	1.96E+00	1.77E+00	
	40	8.02E+01	7.57E+01	6.80E+01	2.01E+00	1.89E+00	1.70E+00	
Nucă	20	4.90E+00	4.80E+00	2.20E+00	1.23E-01	1.20E-01	5.50E-02	
	30	5.00E+00	4.90E+00	2.10E+00	1.25E-01	1.23E-01	5.25E-02	
	40	5.10E+00	5.10E+00	3.00E+00	1.28E-01	1.28E-01	7.50E-02	
Struguri	20	9.30E+01	8.67E+01	7.52E+01	2.33E+00	2.17E+00	1.88E+00	
	30	9.32E+01	8.57E+01	7.34E+01	2.33E+00	2.14E+00	1.84E+00	
	40	9.28E+01	8.40E+01	7.10E+01	2.32E+00	2.10E+00	1.77E+00	
Castravete	20	8.54E+01	8.44E+01	7.42E+01	2.14E+00	2.11E+00	1.85E+00	
	30	8.36E+01	8.35E+01	7.22E+01	2.09E+00	2.09E+00	1.81E+00	
	40	8.16E+01	8.30E+01	6.99E+01	2.04E+00	2.08E+00	1.75E+00	
Morcov	20	7.61E+01	8.26E+01	7.44E+01	1.90E+00	2.07E+00	1.86E+00	
	30	7.42E+01	8.01E+01	7.20E+01	1.85E+00	2.00E+00	1.80E+00	
	40	7.20E+01	7.72E+01	6.94E+01	1.80E+00	1.93E+00	1.73E+00	

Tabelul 3. Valori ale Constantei dielectrice si tg. Delta funcție de frecvența la anumite temperaturi (20,30,40 °C) pentru categoria de produse *lactate*

Categorie	Lactate	Temperatura (°C)	Constanta Dielectrică			Tg Delta		
			Frecvența			Frecvența		
			50Hz	1 kHz	1 MHz	50Hz	1kHz	1 MHz
Branza de vaci feliată	20	4.29E+07	7.77E+06	1.39E+02	6.00E-01	8.41E-01	1.58E+02	
	30	4.33E+07	7.84E+06	1.41E+02	6.06E-01	8.49E-01	1.60E+02	

preambalata	40	4.42E+07	8.00E+06	1.44E+02	6.18E-01	8.66E-01	1.63E+02
Branza de vaci (piata)	20	4.31E+07	7.80E+06	1.40E+02	6.03E-01	8.45E-01	1.59E+02
	30	4.35E+07	7.88E+06	1.42E+02	6.09E-01	8.53E-01	1.60E+02
	40	4.44E+07	8.04E+06	1.44E+02	6.21E-01	8.70E-01	1.64E+02
Cascaval afumat	20	6.39E+07	6.10E+06	6.53E+01	7.70E-01	1.84E+00	2.72E+02
	30	6.42E+07	6.13E+06	6.56E+01	7.74E-01	1.85E+00	2.73E+02
	40	6.45E+07	6.16E+06	6.59E+01	7.77E-01	1.86E+00	2.75E+02
Cascaval de oaie	20	2.98E+06	3.76E+05	7.00E+02	1.16E+00	1.49E+00	3.70E+00
	30	2.99E+06	3.77E+05	7.04E+02	1.17E+00	1.50E+00	3.72E+00
	40	3.04E+06	3.83E+05	7.14E+02	1.18E+00	1.52E+00	3.78E+00
Cascaval impletit	20	6.39E+07	6.10E+06	6.53E+01	7.70E-01	1.84E+00	2.72E+02
	30	6.45E+07	6.16E+06	6.59E+01	7.77E-01	1.86E+00	2.75E+02
	40	6.52E+07	6.22E+06	6.66E+01	7.85E-01	1.88E+00	2.77E+02
Cascaval rola	20	3.13E+06	3.94E+05	7.35E+02	1.22E+00	1.57E+00	3.89E+00
	30	3.16E+06	3.98E+05	7.43E+02	1.23E+00	1.58E+00	3.93E+00
	40	3.19E+06	4.02E+05	7.50E+02	1.24E+00	1.60E+00	3.97E+00
Telemea de vaci	20	8.61E+06	1.21E+06	8.69E+03	9.25E-01	9.67E-01	1.47E+00
	30	8.66E+06	1.21E+06	8.74E+03	9.30E-01	9.72E-01	1.47E+00
	40	8.70E+06	1.22E+06	8.78E+03	9.35E-01	9.77E-01	1.48E+00
Branza de vaci	20	8.36E+06	1.17E+06	8.44E+03	8.99E-01	9.39E-01	1.42E+00
	30	8.45E+06	1.18E+06	8.53E+03	9.08E-01	9.48E-01	1.44E+00
	40	8.53E+06	1.20E+06	8.61E+03	9.17E-01	9.58E-01	1.45E+00
Telemea de oaie	20	8.57E+06	1.20E+06	8.65E+03	9.72E-01	1.02E+00	1.54E+00
	30	8.61E+06	1.21E+06	8.69E+03	9.77E-01	1.02E+00	1.55E+00
	40	8.66E+06	1.21E+06	8.74E+03	9.81E-01	1.03E+00	1.55E+00
Branza topita	20	8.87E+06	1.24E+06	8.96E+03	9.53E-01	9.96E-01	1.51E+00
	30	8.92E+06	1.25E+06	9.00E+03	9.58E-01	1.00E+00	1.52E+00
	40	8.96E+06	1.26E+06	9.04E+03	9.63E-01	1.01E+00	1.52E+00