Application of *4-Chlorophenoxyacetic acid* considerably influences the productivity of the irradiated plants and therefore its use in the practice for irradiated sowing can be recommended.

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SOME THERMOPHYSICAL CHARACTERISTICS OF MILK AND MILK PRODUCTS

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This article deals with thermophysical characteristics of milk and milk products. If we want to protect quality of food we need to know its physical properties. One of the most important are thermophysical parameters as temperature, thermal conductivity and thermal diffusivity. For thermophysical parameters measurements was used PS method and also Hot Wire method. In the first series of measurements we measured relations between thermal conductivity and thermal diffusivity in temperature range (5–25) C for milk. In the second series of measurement was measured relation between thermal conductivity and relative fat content for milk. There were also measured some thermophysical parameters of cheese, processed cheese and acidophilus milk. The results of measurements for milk samples showed that temperature stabilisation process and relative fat content have influence to variation of thermophysical parameters. All measured relations for milk samples during temperature stabilisation have linear increasing progress – fig. 2-3. Figure 4 shows that

increasing relative fat content has decreasing influence on milk thermal conductivity. Results for other milk products are summarised in table 1.

Table 1
Results of thermal conductivity and thermal diffusivity measurements for selected milk products

Sample	Thermal Diffusivity $[m^2/s]$	Thermal Conductivity [W/m .K]
Acidophilus milk	18.5 x E-8	0.51
Processed cheese	16.5 x E-8	0.71
Cheese	15.1 x E-8	0.63

$$\Delta(r,t) = \frac{q}{4\pi\lambda} \ln \frac{4at}{r^2 C} \qquad (1)$$

Where: λ – the thermal conductivity, a – thermal diffusivity, $C = \exp(\gamma)$ with γ the Eulers´constant. The thermal conductivity is calculated from the slope S of the temperature rise $\Delta T(r,t)$ *vs*. the natural logarithm of the time $\ln t$ evolution using the formula

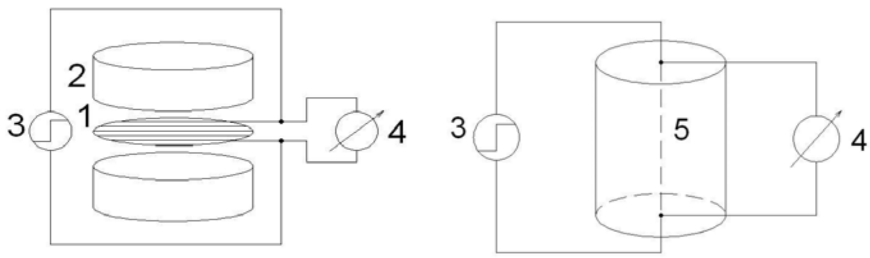

Figure 1
Plane source method Hot wire method
1 – PS sensor, 2 – samples, 3 – current source, 4 – milivoltmeter,
5 – heat source and thermometer

$$\lambda = \frac{q}{4\pi S} \qquad (2)$$

$$\Delta T(x,t) = 2\frac{q\sqrt{at}}{\lambda} ierf\left(\frac{x}{2\sqrt{at}}\right) \quad (3)$$

Where a is thermal diffusivity, λ is thermal conductivity of the sample and *ierfc* is the error function [3].

$$T(0,t) = \frac{q\sqrt{a}}{\lambda\sqrt{\pi}}\sqrt{t} \quad (4)$$

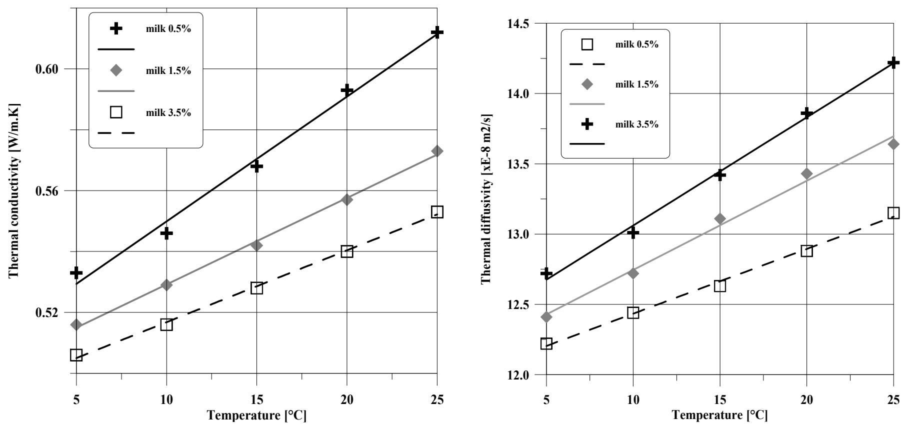

Figure 2-3
Relations of thermal conductivity and thermal diffusivity to temperature for milk with different relative fat content

INSTRUMENTAL MEASURING OF COLOUR AS A MARKER OF ORIGIN OF SOME VARIETIES OF POTATOES

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