Report
Study of different plants and food stuff with Electrophotonic Imaging (EPI)

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Several product samples of different quality were studied with EPI technique generating quantitative data, and EPI images of some products were taken. Herewith we present results of the study.

GAS DISCHARGE GLOW OF SEEDS AS A MEASURE OF THEIR ENERGY

In: Korotkov K.G. Effect Kirlian. Olga publishing. Saint Petersburg, 1995. Pp 117-120

Principles of the organization of the experiment

The principle is illustrated by fig.4.5. Electrode system consists from metal electrode 1 covered with non-polar dielectric 2. Vacuum resin or plastic stable in high intensity electrical field may be used as a dielectric. Photo material 6 is applied on top. Seeds (one or several positioned in the middle of an electrode (fig.4.5 - 3)). Electrode 4 connected to generator 5 is suspended from above to touch the seed (4). The glow is fixed by photo paper 6. Both single seed and four seeds touching each other were photographed. After standard processing photos were scanned, digitazed and analyzed by calculating the area of glow. The process was standard for all the photos.

Both dry wheat seeds and germinated on a humid cloth for 1, 2, 4 and 6 days were analyzed. For germinated seed before capturing sprouts and radicle were cut off. Each seed was photographed only once. Measurements were repeated 10 times and data were averaged. Variation of data were about 5%.

Results and discussion

Fig.4.6 presents results of the experiment. Every column presents data averaged on 10 measurements. Series 1 – single seeds, series 2 – a group of seeds.

As we see from the picture, light emission of seeds change with time: on the first day of germination the glow increases significantly compared with dry seed; then glow decreases, but still stays higher than glow of the dry seed; on the subsequent days glow consistently increases. These tendencies noticed both for a single and a group of seeds, but for a group the difference between dry and germinated seeds glow are higher. As if a group of seeds multiply their energy.

Images look different as well. GAV images of dry seeds have dense central core, narrow crown around and a network of branchy tracks of single electron avalanches. These images are typical for inanimate subjects.

Germinated seeds have inhomogeneous bright core and intensive color crown. Single tracks are absent. The area of glow is much bigger than for dry seed, and this glow is very “active” – it is pulsating and changing in time.

This research is a pilot study and extra data are needed for detailed conclusions.

Conclusions

Every stage of a seed development has its own energy characteristics, and study of these parameters is important and interesting.

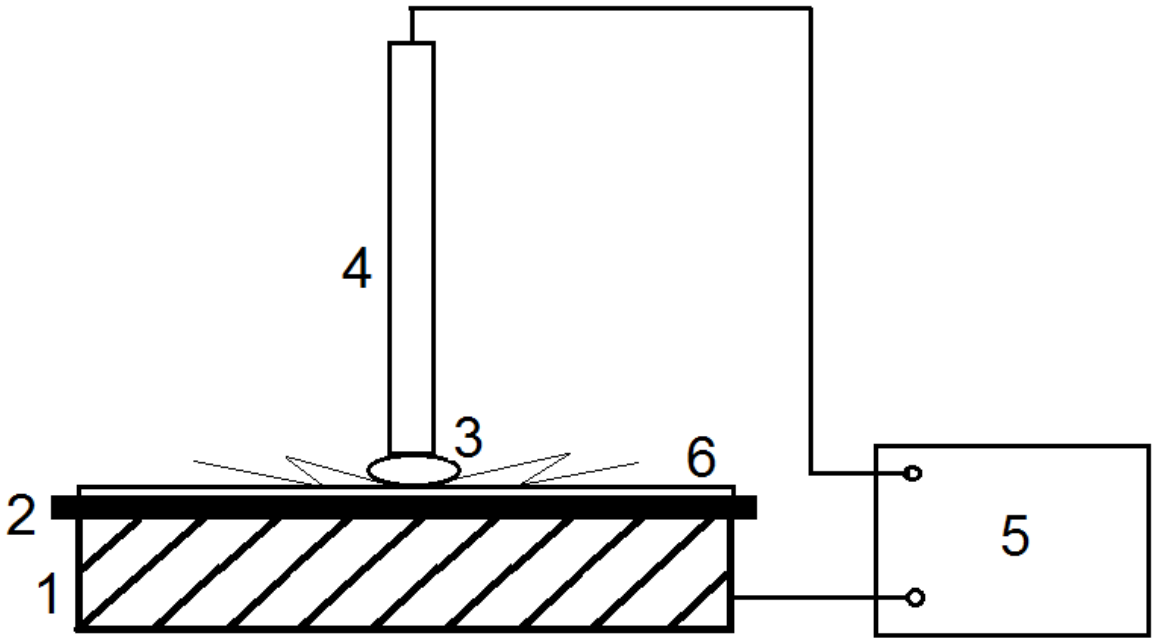

Fig. 4.5. The principle of operation. 1 - metal electrode; 2 - non-polar dielectric; 3 – seed; 4 – electrode; 5 – generator; 6 photo material.

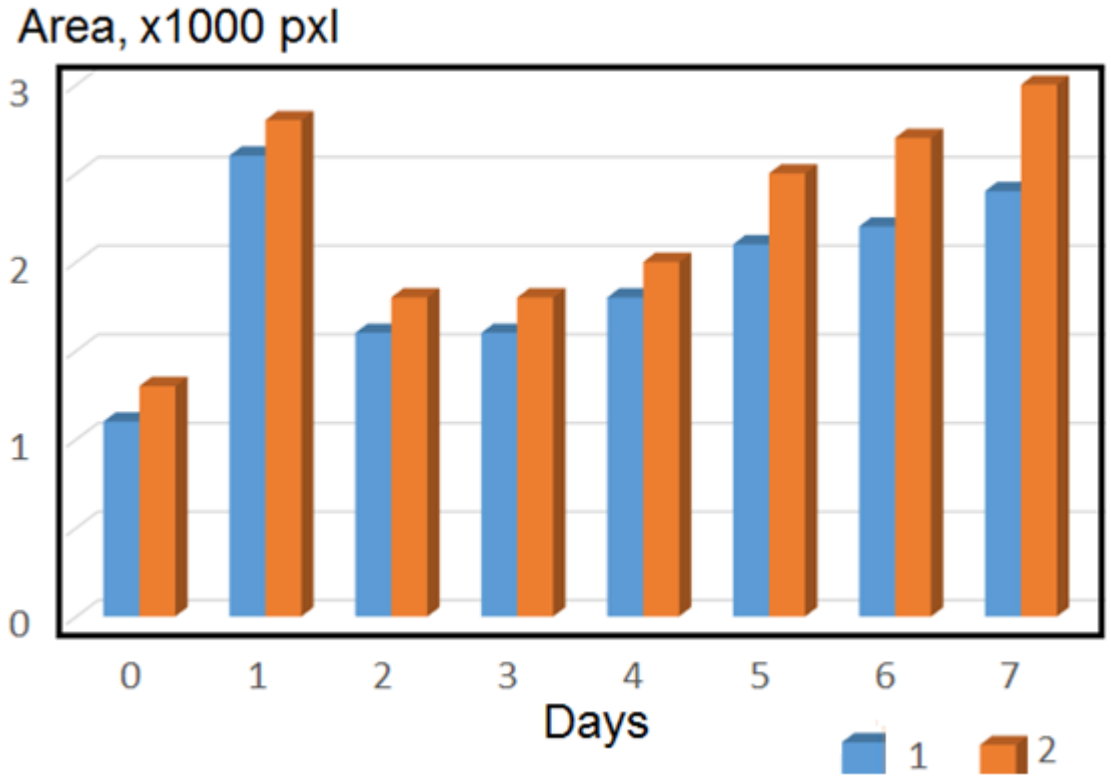

Fig.4.6. Dynamics of seed's glow in time. 1 – single seed; 2 – four seeds.

Carrot

Two samples were taken from carrots with different chemical content. Samples diameter 15 mm, thickness 2 mm and 1 cm, coplanar cutting, were taken from the growing points - the top third. Samples were drying for about 1 hour in a control conditions in laboratory oven. For every sample 20 tests with fresh cut were done and results were averaged.

As we see from the presented data, it was statistical significant difference in the Intensity of light emitted by 2 mm different samples.

Table.1. Parameters of carrot samples

	Samples	Nitrate contain (min-max norm = 250 mg/kg)	pH	Bacterial content	Electrophotonic Intensity
Organic 1 cm	1	80/ 124	5,0	+	17
	2	76/ 114	4,8	+	16.2
Organic 2 mm	1	80/ 124	5,0	+	22.1
	2	76/ 114	4,8	+	19.6
Commercial 1 cm	1	164/173	4,5	-	15.1
	2	143\153	4,6	-	16.8
Commercial 2 mm	1	164/173	4,5	-	16.5
	2	143\153	4,6	-	17.4

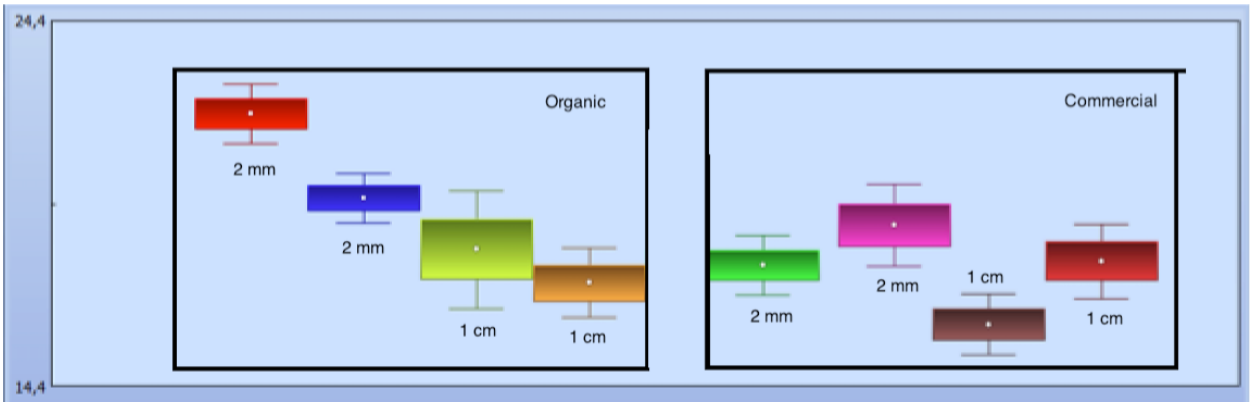

Fig.1. Statistical comparison of the EPI Intensity parameter for different samples of carrot.

Grains

Two types of wheat grains were tested: with mold (L) and without (D). Grains were tested for germination, results are presented in Table 2 and figures. For every sample 20 tests with fresh cut were done and results were averaged.

Table 2. Parameters of germination.

Germination	L 20 grains	D 21 grains
2nd day	12 from 20	16 from 21
	White mold	No mold
3rd day	6 active	18 active

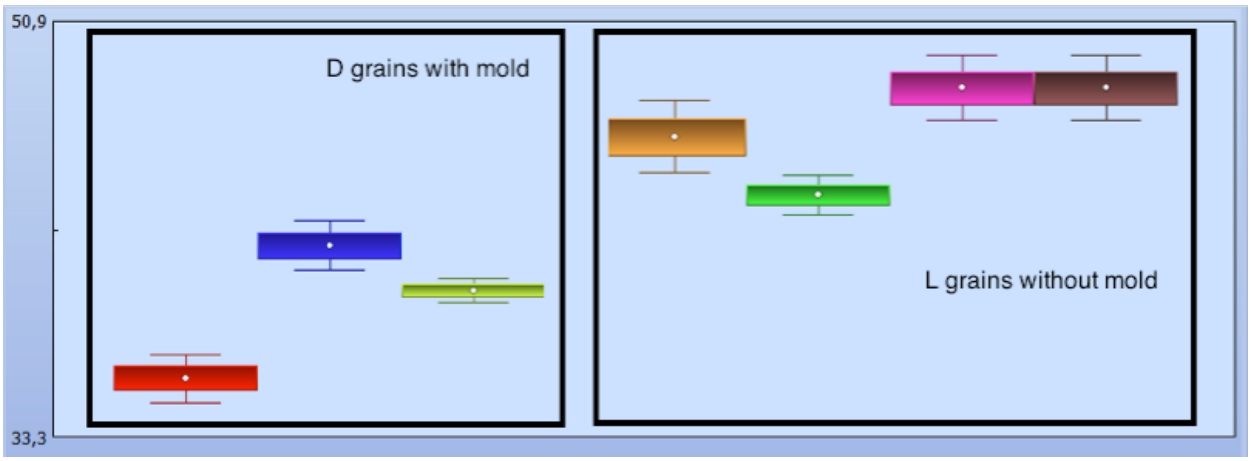

Fig.3. Statistics of EPI parameters of different grains after germination.

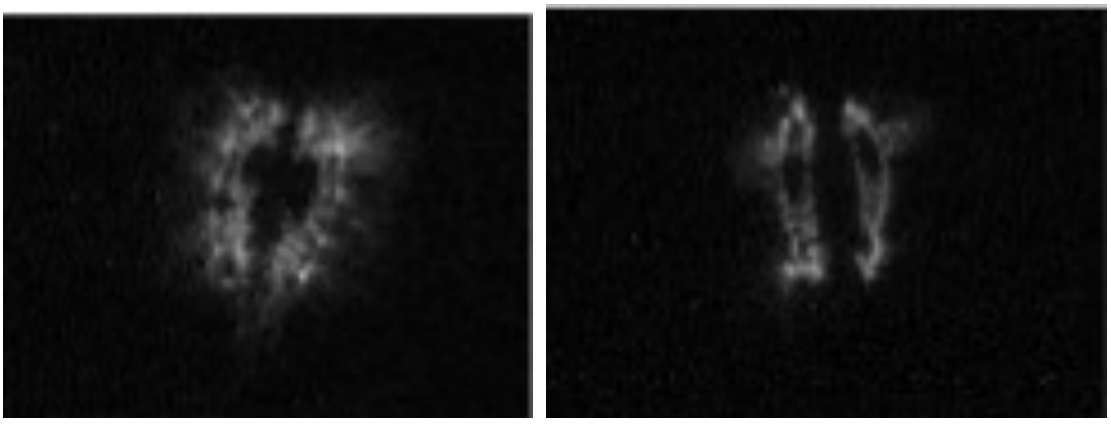

Fig.3. EPI images of Grains dry D and L – one grain.

Fig.7. EPI image of meat boiled.

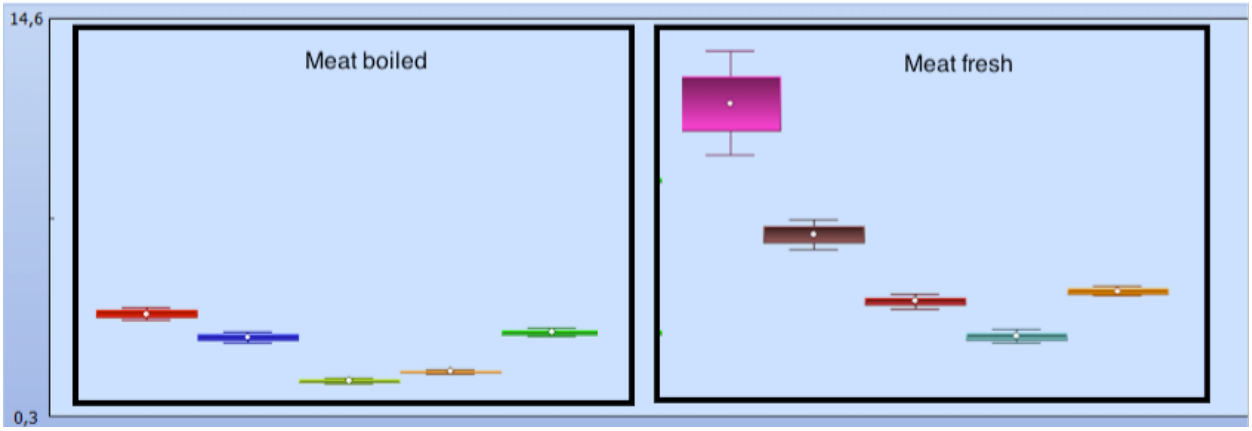

Fig.8. Statistical comparison of the Intensity of EPI images of meat fresh in different stages of dryness and meat boiled.