

Abstract:

The evaluation of seed and fruit quality is a very important research problem and a practical problem. In case of the investigation of seed germination capacity, germination tests used these days are lengthy procedures. In this paper, a fast thermographic method is proposed to evaluate germination capacity of leguminous plant seeds. A thermographic AGEMA 880 LWB camera and a CCD camera (for imaging in visible range) were used to register and process the images. The set of elaborated measurements and the methodology applied made it possible to determine the average temperature of the seeds and their parts and to identify specific fragments of the image due to simultaneous registration in the visible and IR range. Considerable differences were noted in average temperature of seeds at the initial stage of the swelling process depending on the storage time and germination energy. The courses of temperature changes in time of viable pea seeds showed a considerable decrease in the radiation temperature (more than 1°C) during the first 12 hours.