

Title: GODECT - (Green Carotenoid Extractor) Design of Carotenoid Extraction Based on Green Electric Pulse in an Effort to Realize Zero Waste Technology

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Carotenoids as precursors for the formation of vitamin A are essential for the process of antioxidants, intercellular communication and immune channels in the body, eliminating the risk of cancer, cardiovascular, macular degeneration and cataract formation. Carotenoids are lipophilic, so carotenoid extraction requires non-polar solvents such as hexane, methanol, and ethanol. Carotenoid extraction of carrots with olive oil solvents will increase the content of antioxidants and vitamin A in olive oil. The technology commonly used in carotenoid extraction is batch maseration using solvent. Other technologies are MAE (Microvawe Assisted Extraction), extraction that utilizes microwaves with faster time, but its method uses heat causing degradation by heat and cis-trans isomeration of carotenoids thereby affecting anti-oxidant properties. This invention is a carotenoid extraction tool based on Green Electric Pulse technology. Green Electric Pulse technology is a technology that involves the application of short pulses repetitive electric fields through materials placed between two electrodes and green solvent applications. Extraction with electric field short pulses can be performed on a natural carotenoid-containing coloring agent with extra-virgin olive oil solvent using an input voltage of 0.5 kV / cm for 1 minute. Green Electric Pulse technology is fast, energy efficient and environmentally friendly.

Biography

Adi Rahmanto Wibowo is a student at Brawijaya University. He is on a bachelor's degree in agricultural engineering. He is interested in the field of food technology. Now there is developing an extractor with green electric pulse. He is active in the ARSC (Agricultural Research and Study Club) organization.

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