

IMPACT OF PROCESSING CHAIN ON QUALITY PARAMETERS IN BLACK PEPPER (*PIPER NIGRUM* L.)

H.M.R.P. Lakmali^{1*#}, T. Liyanage², H.M.P.A. Subasinghe², and
J.P. Kirthisinghe³

¹Faculty of Agriculture, Aquinas College of
Higher Studies, Colombo 8, Sri Lanka

²Department of Export Agriculture, Matale, Sri Lanka

³Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka

*Correspondence E-mail: ruvinilakmali96net@gmail.com, Phone: +94713319431

#Presenting Author

Abstract: Black pepper (*Piper nigrum* L.) is an important spice crop in the tank cascades systems in the intermediate zone of Sri Lanka. Maintaining the quality of black pepper products is challenging as quality and safety of foods are influenced by various pre and postharvest factors. Postharvest factors are controlled by humans, thus inadequate management can lead to a cascading impact throughout the entire pepper value chain. Present study aims to investigate the influence of diverse processing methods in black pepper processing chain on key quality parameters. The three-factor factorial completely randomized experimental design involves the examination of three threshing methods (Hand threshing, Foot threshing, Machine threshing), two blanching techniques (Blanching, without blanching), and two drying methods (Solar drying and Machine drying) as distinct treatments with triplicates. The assessed parameters encompass fungal infection rate, piperine content, oil content, moisture content, and colour. Results indicate that hand-picked samples exhibit notably lower fungal infection rates, signifying this method as preferable due to minimal damage to pericarp. Blanching and machine drying emerge as optimal practices for preserving overall quality. Notably, piperine content rises with blanching, while machine-dried samples demonstrate decreased piperine content attributed to elevated temperatures during drying. Hand threshing demonstrates a negative correlation with oil content, whereas both blanching and machine drying positively impact oil content. Moisture content remains unaffected by the various treatments. Blanching significantly influences colour, while machine drying being favoured over sun drying. In conclusion, the study recommends the adoption of blanching and machine drying as effective strategies for sustaining high-quality attributes in black pepper processing.

Keywords: Black pepper; Blanching; Drying; Quality parameters; Threshing