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**Screening of some selected local black pepper (*Piper nigrum* L.)  
accessions for their chemical quality and yield**

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Black pepper is the largest commodity (37%) of the world spice trade. In Sri Lanka, it earns about Rs 3,500 million from the annual export of 9000 t. The special features of black pepper are the pungency and aroma that give it a value as a spice. The main pungent chemical constituent is piperine. The unique aroma and flavor of pepper are given by volatile oil and oleoresin. A total of 43 local accessions with two introductions, Panniyur1 and Kuching were selected and field planted at the Export Agriculture Research Centre, Matale, for further evaluation. The main objective of the study was to select the best accession/s by evaluating the chemical components (dry basis) of the local pepper accessions. Therefore, the harvested berries were oven dried at 50 °C and the moisture content was determined using 5 g of dried pepper using the Dean and Stark method. Volatile oil content was measured by subjecting 30 g of the sample for water distillation for 4 hours. The oleoresin content was determined by the Soxhlet extraction method with 10g of the sample. Data were analyzed using ANOVA procedure of the SPSS computer software package. Results revealed that the accession BD/MW24 has high amounts of volatile oil (4.15%), oleoresin (18.20%) and piperine (11.92%) content. For the volatile oil content, accession BD/MN42 has the highest amount (4.24%) whereas the local accessions BD/KG38, BD/MW24, RP/NA1, MN1, BD/MW23, KWW10, BD/HM37 and MT/RT2 have more oil contents than the introduction, Kuching (3.60%). For the oleoresin content, local accession, BD/ST1 has the highest amount (21.95%) while BD/MW24 has more oleoresin (18.20%) than the introduction, Kuching (17.55%). For Piperine content, local accession BD/MW24 shows the highest amount (11.92%) whereas MN1, RP/NA1 and BD/MW23 also have about 11%. Accessions, BD/WA2, BD/GM29, KWW10, WGB1 and RP/KO3, resulted in higher piperine contents than the introduction, Kuching (7.91%). Introduced cultivar Panniyur 1 has a very low content of oil (3.14%), oleoresin (14.60%) and piperine (7.73%). The highest average processed black pepper yield (2672 kg ha<sup>-1</sup> yr<sup>-1</sup>) was observed in the accession BD/MN41, whereas the accession MT/DM 7 has 2502 kg ha<sup>-1</sup> yr<sup>-1</sup> of yield. The local accession, BD/MW24 has higher volatile oil (4.15%), oleoresin (18.2 %) and piperine (11.92%) on dry basis when compared to the other local accessions.