Screening of Tea Germplasm on Suitability for Green Tea Manufacturing

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Demand for green tea consumption has gone up among the local consumers. Thus, tea growers look for cultivars suitable for green tea production. Studies were conducted to screen the suitability oftea germplasm for green tea manufacturing aiming for developing better cultivars in future. Twenty six accessions from the germplasm representing exotic collection, recommended cultivars and estate selections were used. Two leaves and the bud were picked from plants and green tea was prepared using an optimized hand processing method by steaming to deactivate enzymes, hand rolling and pan frying, twisting and drying. Samples were triplicated and sensory evaluation on quality of ungraded green tea was done by professional tea tasters. Taster's comments were transformed into ranks and scores were summed up to get the Total Quality Score (TQS). Ranked data were subjected to cluster analysis using Average Distance Cluster method and resultant dendrogram was constructed using PAST 3 software. Twenty six accessions were grouped based on the average ratings given for individual quality parameters; dry leaf:, appearance, aroma, infused leaf: appearance, aroma, liquor: appearance, aroma, colour, taste using average linkage cluster analysis. Resultant dendrogram was clustered in to four major groups. First group comprised of CH13, estate selection and six accessions from the exotic germplasm collection. All those accessions were rated as producing high quality green tea. The second group consisted of TRI 4067 recommended cultivar and six other accessions from the exotic germplasm collection, which are also considered as good accessions for quality green tea. This is the first attempt on screening tea germplasm for developing a Sri Lankan green tea cultivar.

Keywords: Green tea, Sensory evaluation, Exotic tea germplasm, Polyphenol, Caffeine