In Hevea rubber production, ethephon (ET) has been used to prolong latex flow for improved yield. The same method may prove effective in other rubber-producing plants such as Taraxacum kok-saghyz (TK). The objectives of this study were to evaluate the effect of post-harvest ET application on TK rubber production and rubber quality. Harvested roots of one year old TK plants from multiple and single clonal genotypes grown in raised beds were submerged in either ambient or cold (4°C) 1% ET solution. Rubber and latex concentrations were determined. At ambient temperature, but not at 4°C, ET pretreatment increased rubber concentration more than two times after nine days in multiple genotypes, and more than three times in clones of one genotype but not of another. The enzymatic root processing method, PENRA III, yielded twice the rubber from ET pretreated roots (multiple genotypes) than from controls, with improved rubber purity and consistent quality. However, one clonal genotype did not respond to the combined ET pretreatment and PENRA III method, indicating that genotype may influence rubber extraction efficiency. In conclusion, adaptation of these methods to a larger scale has the potential to increase post-harvest TK rubber production and overall yield.

**RESULTS AND DISCUSSION**

ET pretreatment was combined with rubber processing by the PENRA III method, which uses hot water extraction and enzymes to increase yield and quality of TK rubber. For the multi genotype roots, more than twice the rubber (Fig. 4) and more floating rubber (Fig. 5a) were extracted with the combined method. However, for the single genotype roots, only one clone (A) produced a similar rubber extractable yield compared to multi genotype roots (Fig 6a and 6b). Clonal differences in ET response indicated that genotype influenced rubber biosynthesis and extraction efficiency. ET pretreatment did increase the inulin content of multiple genotype roots (Fig.5) and the mean inulin content of Clone A roots (Fig. 6B). ET pretreatment also enhanced the quality of the rubber extracted by the PENRA III extraction method by reducing the percentage of dirt (Table 1). Molecular weight, polydispersity and gel content were little changed by the ET pretreatment (Table 1).

**CONCLUSIONS**

Post-harvest ET application improved rubber yield at ambient temperature. ET pretreatment improved yield and rubber purity of PENRA III–extracted rubber with no adverse effect on rubber quality. Rubber yield from the combined method was dependent upon the specific genotype. Adaptation of these methods to a larger scale may increase post-harvest TK rubber production and overall yield.