

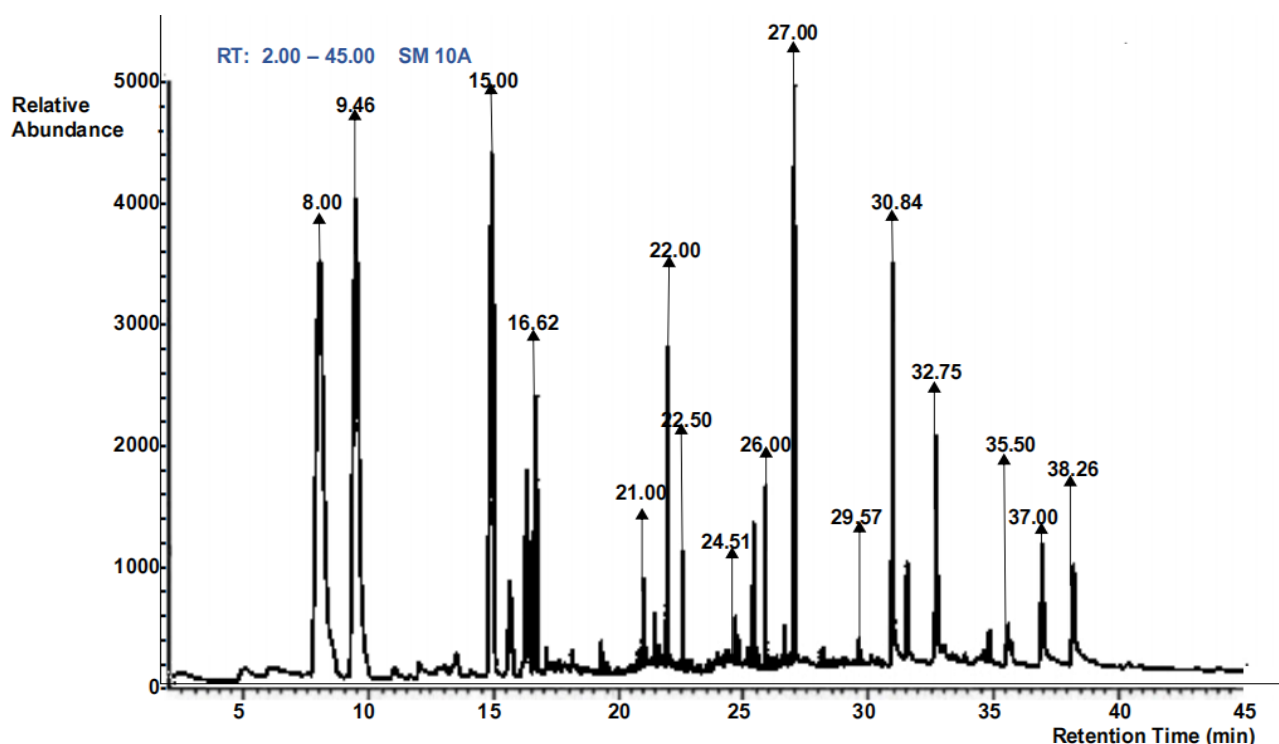


Figure 7 Chromatogram of aqueous extract of *Tridax procumbens*

3 Discussion

This study explored the efficacy of aqueous leaf extracts of *Tridax procumbens* in controlling brown rot of orange fruits during ambient storage. In fact, the study showed that all the orange fruits treated with all the varying concentrations (5, 10, 15 and 100%) of the *Tridax* extracts were disease free (healthy), showing no sign of any infection by day 10 in storage, whereas the control fruits had started showing slight rottenness. Even when the storage durations became extended till day 30 and the control fruits had become completely rotten, fruits treated with 15 and 100% *T. procumbens* extracts were still disease free, without any sign of infection. Even performed better than the fungicide used (mancozeb) because all mancozeb treated fruits were moderately rotten by day 30. Though Rosenberger et al. (2018) demonstrated the effectiveness of various fungicides in controlling post-harvest rots of stone fruits, this work has further confirmed the use of botanicals in extending the shelf life of fruits better than fungicide because the aqueous leaf extracts of *Tridax procumbens* particularly 15 and 100% extracts, best protects the orange fruits for 30 days with no sign of brown rot/infection. This observation is also consistent with the works of Efunwoye et al. (2024) who observed that all the Padma tomato fruits treated with *Tridax procumbens* in their investigation exhibited significantly lower disease incidences ($p \leq 0.05$) than the control fruits throughout the storage period.

This showed the efficacy of botanicals in controlling fruit pathogens as equally buttressed by Zakawa et al. (2018) who investigated the use of neem leaf extracts in the control of post-harvest fungal pathogens on mango fruits in Yola, Adamawa state, Nigeria emphasizing the potential of the extract as a biofungicide and Udomlak et al. (2008) who demonstrated the antifungal efficacy of clove and cinnamon oil in preventing post-harvest decay in grape fruits, showing the synergistic potential of both oils in combating post-harvest fungi of grape fruits *in vitro*. Equally, Oladele (2019) investigated the antifungal activity of garlic extracts against three post-harvest pathogens that affect fruits, demonstrating garlic's potential as a natural preservative. In recent years, researchers have investigated the antimicrobial and antioxidant properties of *Tridax procumbens* extracts in fruit preservation. No wonder, Narendhirakannan and Subramanian (2005) reported that *Tridax procumbens* has been traditionally employed in various medicines for its pharmacological properties and antimicrobial activities in food preservation. Similarly, it has been reported that *T. procumbens* has played a major role in food preservation due to its rich phytochemical compositions with potential antimicrobial properties (Gupta et al., 2019). Notably, tannins,