The major volatile compounds generated in the PrenCy and PrenCySO systems were thiophenes and thiazoles.

8. The major volatile compounds generated in the PrCy and PrCySO systems were disulfides and trisulfides.

7. The major volatile compounds generated in the MeCy and MeCySO systems were monosulfides and disulfides.

6. The IR spectrum analysis of the synthesized compounds degraded from the nonvolatile sulfur-containing flavor precursors of Welsh onion during frying or baking treatment were the sulfur-containing volatile compounds carried the methyl and propyl group. Whereas, the major sulfur-containing volatile compounds degraded from the nonvolatile sulfur-containing flavor precursors of shallot during frying or baking treatment were the sulfur-containing volatile compounds carried the methyl and 1-propenyl group.

5. The major sulfur-containing volatile compounds generated in unblanched, fried, and baked shallot and Welsh onion, it showed that blanched treatment could transform enzymatically to the primary flavor compounds with the pungent odor. These primary flavor compounds, which are very high purity.

4. The volatile compounds isolated from shallot can be divided into (1) those probably generated from thermal degradation of sulfur-containing nonvolatile flavor precursors; (2) those probably generated from thermal degradation of lipids; (3) those probably generated from Maillard reactions; and (5) those probably generated from uncertain sources. The contributions of the flavor precursors of shallot to the flavor of thermally processed shallot was found both through the thermal degradation of these precursors and the Maillard type interactions of these precursors with others sugars in shallot. Whereas, the contributions of the flavor precursors of Welsh onion to the flavor of thermally processed Welsh onion was then proved.

3. From the fact that the yield of volatile compounds in fried blanched or baked blanched shallot was higher than that in fried or baked Welsh onion, the importance of the nonvolatile flavor precursors to the flavor of thermally processed Welsh onion or baked Welsh onion, and theyield of volatile compounds in fried blanched or baked blanched Welsh onion was very close to that in fried or baked Welsh onion. This shows that blanched treatment could be an effective method to enhance the flavor of shallot and Welsh onion.

2. From the fact that only a small amount of volatile compounds were generated in the blanched shallot and blanched Welsh onion, whereas abundance small amount of volatile compounds were generated in the blanched shallot and blanched Welsh onion, and the yield of volatile compounds in fried blanched or baked blanched shallot, baked blanched shallot, and fried blanched shallot were isolated, concentrated, and analyzed by using the same method as that shown in (1). Here were some important conclusions for this study: 1. The fried shallot sample with small amount of volatile compounds were generated in the blanched shallot and blanched Welsh onion, whereas abundance small amount of volatile compounds were generated in the blanched shallot and blanched Welsh onion, the best overall acceptance was that fried in initial oil temperature 200 ℃ and final oil temperature 170 ℃.

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