

INTISARI

Teh hitam di Indonesia memiliki rasa yang bagus namun aroma yang dihasilkan masih lebih rendah dibandingkan dengan negara lain seperti Cina dan India. PT Pagilaran saat ini telah mengembangkan klon-klon baru diantaranya adalah klon PGL 9, PGL 10, PGL 11, PGL 12 dan PGL 15 dengan harapan dapat menciptakan teh hitam dengan *inner quality* dan flavor yang bagus. Sebagian besar aroma teh hitam dihasilkan melalui hidrolisis ikatan glikosida oleh enzim β -glukosidase. Sehingga, tujuan dari penelitian ini adalah meningkatkan aroma teh hitam dengan penambahan enzim β -glukosidase. Penambahan enzim β -glukosidase dilakukan dengan menyemprotkan larutan enzim yang dilarutkan dalam buffer sodium sitrat pH 5.0 pada saat tahap awal fermentasi. Selama proses pembuatan teh hitam, penambahan enzim β -glukosidase tidak mempengaruhi aktivitas enzim polifenol oksidase. Komponen kimia yang berkaitan dengan aktivitas enzim PPO seperti theaflavin, tearubigin dan total fenolik serta kapasitas antioksidan juga tidak mengalami perubahan yang signifikan. Dan berdasarkan rasio TF/TR semua sampel tergolong teh hitam dengan kategori *better quality*. Dari total senyawa volatil yang terdeteksi, terdapat 11 senyawa volatil dari prekursor glikosida pada teh hitam yang meningkat akibat penambahan enzim β -glukosidase, diantaranya adalah *3-hexenol*, *phenylethyl alcohol*, *linalool oxide*, *trans linalool oxide*, *linalool*, *cis linalool oxide*, *epoxylinalool*, *cis geraniol*, *geraniol*, *benzaldehyde*, dan *methysalicylate*. Penambahan enzim β -glukosidase pada tahap awal fermentasi mampu meningkatkan konsentrasi senyawa volatil dari hidrolisis ikatan glikosidik sebanyak 250% dan secara keseluruhan mampu meningkatkan konsentrasi senyawa volatil sebanyak 180%.

Kata Kunci : Teh Hitam, Aroma, β -glukosidase, Senyawa Volatil

ABSTRACT

Black tea in Indonesia has a good taste but the aroma is lower than other countries such as China and India. Currently, PT Pagilaran has developed new clones including the PGL 9, PGL 10, PGL 11, PGL 12 and PGL 15 clones with the hope of creating black tea with good inner quality and flavor. Most of black tea aroma is produced through the hydrolysis of the glycoside bonds by the β -glucosidase enzyme. Thus, this study aimed to increase the aroma of black tea with the addition of the enzyme β -glucosidase. The addition of the β -glucosidase enzyme was carried out by spraying the enzyme solution dissolved in sodium citrate buffer pH 5.0 at the initial stage of fermentation. During the process of making black tea, the addition of the β -glucosidase enzyme did not affect the activity of the polyphenol oxidase enzyme. Chemical components related to the activity of PPO enzymes such as theaflavins, tearubigin and total phenolic and antioxidant capacity also did not change significantly. And based on the TF / TR ratio, all samples were classified as black tea with the category of better quality. Of the total volatile compounds detected, there were 11 volatile compounds from glycoside precursors in black tea which increased due to the addition of β -glucosidase enzymes, including 3-hexenol, phenylethyl alcohol, linalool oxide, trans linalool oxide, linalool, cis linalool oxide, epoxylinool, cis geraniol, geraniol, benzaldehyde, and methysalicylate. The addition of the β -glucosidase enzyme in the early stages of fermentation was able to increase the concentration of volatile compounds from the hydrolysis of the glycosidic bonds by 250% and overall was able to increase the concentration of volatile compounds by 180%.

Keywords: black tea, aroma, β -glucosidase, volatile compounds