# Preliminary Study on Keratinase from Two Indonesian Isolates

| | |
|---|---|
| **Title** | Preliminary Study on Keratinase from Two Indonesian Isolates |
| **Author Order** | of |
| **Accreditation** | |
| **Abstract** | Keratinases (E.C.3.4.99.11) constitute a group of enzymes capable of disrupting the highly stable keratin structure consisting of disulphide, hydrogen, and hydrophobic bonds in the form of ÃƒÂŽÃ‚Â±-helices and ÃƒÂŽÃ‚Â²-sheets B. licheniformis MB-2 and Bacillus sp. MTS are two feather-degrading bacteria isolated from Tompaso crater at North Sulawesi and sulfuric land around Tangkuban Perahu in West Java. They were both capable of breaking down whole chicken feathers. In addition both isolates were capable of degrading other proteinous substrates rich in beta structure such as coccon, silk, human hair and fish scales. Result of fermentation experiment implied that addition of nitrogen sources (0.02% yeast extract and 0.02% tryptone) to the basal medium increased keratinase production. Our experiments showed that keratinase production of Bacillus sp. MTS was higher and faster than that from B. licheniformis MB-2. Maximum extracellular keratinase activity of the enzyme derived from B. licheniformis was obtained during stationary phase at 72 h, while Bacillus sp. MTSÃƒÂ,Ã‚Â  was reached at 48 h. Disulfide reductase activity also detected in the extracellular fluid of Bacillus sp. MTS.ÃƒÂ,Ã‚Â  The maximum condition for extracellular keratinase activity was 55oC and the enzyme showedÃƒÂ,Ã‚Â  two maximum pHs :ÃƒÂ,Ã‚Â  pH 8.0 and pH 10. The zymogram analysis indicated sixth protein bandsÃƒÂ,Ã‚Â  ofÃƒÂ,Ã‚Â  17, 25, 32, 53, 96 and 122 kD which were able to hydrolyze gelatin substrate in-situ. (Animal Production 12(1): 60-68 (2010)Key Words : Bacillus, feather, keratinase, disulfide reductase |
| **Publisher Name** | Universitas Jenderal Soedirman, Faculty of Animal Science, Purwokerto-Indonesia |
| **Publish Date** | 2011-05-18 |
| **Publish Year** | 2010 |
| **Doi** | |
| **Citation** | |
| **Source** | ANIMAL PRODUCTION |
| **Source Issue** | Vol 12, No 1 (2010): January |
| **Source Page** | |
| **Url** | http://animalproduction.net/index.php/JAP/article/view/281 |
| **Author** | Dr Ir SRI RAHAYU, Master of Science |