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## Utilization of urine and weed of *Chromolaena odorata* as a basic materials for liquid fertilizer

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In Indonesia, livestock urine is considered as waste, while weed of *Chromolaena odorata*, which are very toxic to ruminants, is abundant in grassland area. These two materials have great potential to improve soil fertility because they can be made to organic fertilizer through fermentation. Fermentation of mixed urine, *Chromolaena* and water with the proportion of 25:25:50% added with small proportion of yeast tape, a liquid fertilizer produced with nutrient contents of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O was 2.3, 0.32 and 0.15%, respectively. The research results showed that the application of liquid fertilizer significantly improved (P<0.01) the growth and biomass production of *Panicum maximum*, *Brachiaria decumbens* and *Pennisetum purpureum* where *Panicum maximum* showed the best response.

### Recent Publications

1. Andi P, F Zakaria, H D Kusumaningrum and Syamsuddin Hasan (2014) Selected mineral in meat of cattle grazing in mine revegetation areas and safe consumption for human. *Food Science and Quality Management* 30:18-24.
2. Tanri G R, Syamsuddin Hasan, S Rasjid and S N Sirajuddin (2015) Accessibility goat livestock cooperation with the government, merchant banking and collecting in Majene Regency, West Sulawesi Province. *American Eurasian Journal of Sustainable Agriculture* 9(7):13-18.
3. Syamsuddin Hasan, A Natsir, A Ako, A Purnama and Y Ishii (2016) Evaluation of tropical grasses on mine revegetation for herbage supply to bali cattle in Soroako, South Sulawesi, Indonesia. *Journal of Biological Science* 16(2):102-106.
4. Tanri G R, Syamsuddin Hasan, S Rasjid and S N Sirajuddin (2016) Development model of goat farming business base on productive economy in Majene Regency, West Sulawesi, Indonesia. *American Eurasian Journal of Sustainable Agriculture* 10(3):1-5.
5. Rinduwati, Syamsuddin Hasan, J A Syamsu and D Useng (2016) Carrying capacity and botanical diversity of pastoral range in Gowa Regency. *International Journal of Science: Basic and Applied Research* 29(3):105-111.

### Biography

Syamsuddin Hasan has his expertise in Forage and Crop Science. He has been a Lecturer of Faculty of Animal Science, University of Hasanuddin, South Sulawesi Indonesia since 1979. He was the Dean of Faculty of Animal Science, University of Hasanuddin from 2006 to 2014 for 2 periods. He was a Reviewer in The Ministry of Higher Education, Research, and Technology of Indonesia since 2004-2016. He is active to join national and international conferences as well. His target is focusing on research. Now, he is enrolled as the Head of Forage Crops and Pasture Science Laboratory, University of Hasanuddin.

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