

# Utilizing Black Tea Waste, UGM Student Won Altech Young Scientist Competition

Wednesday, 21 April 2010 WIB, By: Marwati

---


A student of Universitas Gadjah Mada (UGM), again, earned a prestigious international achievement. Dewi Ratih Ayu Daning, student of Faculty of Animal Sciences, was the champion in the *Altech Young Scientist* competition held by Altech. The girl, who is usually called as Daning, won two championships. Apart from becoming the 1st undergraduate country winner for Indonesia after eliminating 80 other candidates, in February, Daning was also the champion in Asia Pacific region, defeating 1,000 candidates.

The success brought Daning to compete in the world's level from 16-19 May. She will present her research in *Altech's 26th International Animal Health and Nutrition Symposium* and compete with representatives from North America, South America, Europe and Africa in Kentucky, USA.

The achievement of the student of Nutrition and Feed Department was gained on her research proposal about utilizing black tea to reduce methane gas content in rumen fermentation. Her research was started from her concern about global warming that affects many countries. As we know that methane gas is a pollutant that damages the ozone and causes global warming.

She said that in this case, ruminants are the producers of some 20% of the total methane gas in the world. To reduce this gas production, the girl born in Malang on 19 December 1988, tried to solve it by creating eco-friendly husbandry. She made a breakthrough by adding black tea waste to ruminant feed. "Black tea contains tannin compound (1.59%) that can suppress the growth of methane gas bacteria such as protozoa and methanogenic bacteria," she explained in UGM Fortakgama Room, Tuesday (20/4).

Daning mentioned that the addition of black tea to cattle feed proved to reduce methane gas



production significantly. The laboratory tests showed that by adding 6 mg of tannin, protozoa counts in cattle's rumen decreased up to 34% and methane gas production decreased up to 62%. Six milligram of tannin compound was gained from 0.1 gram of black tea waste and 0.3 gram of forage feed (king grass and concentrate).

Further she said that by adding three milligrams of black tea waste to the feed, the methane gas produced is only 1.35 milligram. Meanwhile, cattle feed that is not given black tea waste and only uses forage feed will produce more methane contents (4 mg). "Therefore, reducing methane production does not necessarily mean becoming a vegetarian, we only need to use black tea waste that has not been utilized optimally," she explained.

---

## Related News

- [UGM Runner-Up in Altech Young Scientist World Championship](#)
- [Waste Can Be Made Elegant Clothing](#)
- [Utilizing Black Tea Waste, UGM Student Won Altech Young Scientist Competition](#)
- [Student Community Service UGM Use Fruit and Vegetable as Fertiliser](#)
- [Thanks to Fish Waste, UGM Students Win National Business Competition](#)