

## Processing of fermented rice straw

**R**ice straw is one of the most common agricultural wastes which has not been utilized well yet. Rice straw production considerably varies, from 12 to 15 tons per hectare, or from 4 up to 5 tons dry straw depending on the location and varieties.

Various efforts have been conducted to increase the quality, either physically, chemically or biologically, of rice straw but the process is still relatively expensive and unsatisfactory.

A new processing method which is relatively cheap, practical and of which the resulting product is preferred by cattle has now been developed. This involves fermentation of rice straw (Fig. 1) by adding

and lipolytic microbes which have non-symbiotic nitrogen fixation characteristics (e.g. starbio, starbioplus, EM-4, etc.). Fermentation is the degrading process of complex structure of materials physically, chemically, and biologically into simple structure, so that digestibility becomes more efficient.

### Materials

- Rice straw, 1 ton
- Urea, 6 kg
- Starbio or similar materials, 6 kg
- Water

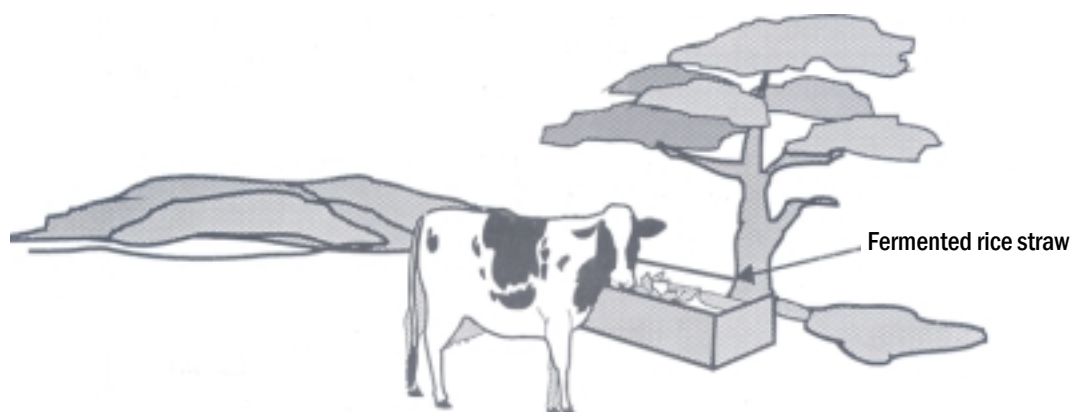


Fig. 1. Fermented rice straw

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*FFTC: An international information center for  
small-scale farmers in Asia*

### Cooperating agency for this topic:

West Nusa Tenggara Assessment Institute for  
Agricultural Technology, Indonesia

## Location

A shaded/roofed place, to prevent from rain and direct sunshine.

## Processing

- ❑ Harvested dried rice straw is withered for  $\pm$  1 day to obtain 60% moisture content.
- ❑ Move withered rice straw onto processing site and pile up until 20-30 cm, then spread urea, microorganism starter (starbio or similar materials), and water (Fig. 2); pile up again until  $\pm$  1.5 m.
- ❑ Keep for 21 days.
- ❑ After 21 days, the rice straw pile is uncovered and dried.
- ❑ The rice straw is ready to be given to cattle or can be rolled and stored in boxes in a storehouse.
- ❑ Rice straw can be stored for  $\pm$  1 year.



Fig. 2. Processing of fermented rice straw