

Nutritive value of wheat straw treated with *Pleurotus* fungi

ABSTRACT

Soaked and pasteurised wheat straw was inoculated with five species of *Pleurotus* fungi (coded P-21, P-30, P-41, P-60 and P-90), packed in polyethylene bags and incubated in a fermentation chamber for 21 days. The chemical composition, *in vitro* digestibility and *in sacco* degradability of the treated and untreated straw were estimated using a complete randomised design consisting of six treatments and four replicates. In a feeding trial, *in vivo* digestibility and voluntary intake were determined in bulls, using a 3x3 change over design. Dietary treatments were: 1) untreated wheat straw (UWS) as control; 2) fungal treated (P-41) wheat straw before mushroom formation (FTWS); 3) spent wheat straw (SPWS) after mushrooms were harvested. Apart from P-90, fungal treatment significantly ($p < 0.05$) increased the crude protein (CP) and reduced the cell wall components of the straw. The *in vitro* dry matter and organic matter digestibility significantly ($p < 0.05$) increased in the treated straw particularly with the treatments of P-41 and P-60. The *in situ* degradability and *in vivo* digestibility of DM and OM were significantly ($p < 0.05$) increased in treated straws with the highest values observed for treatment P-41. The intake of DM, OM and digestible organic matter (DOM) were significantly ($p < 0.05$) increased in cows fed FTWS.

Keyword: Fungal treatment; Nutritive value; *Pleurotus*; Wheat straw