

Forage intake, N and NDF flow to the abomasum and rumen pool sizes of NDF in *Bos indicus* (Boran) steers fed oat, lablab, native grass hay or wheat straw

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The objective was to investigate forage intake, NDF (neutral detergent fibre) and N flow to the abomasum and rumen pool sizes of NDF in Boran steers fed oat ((O) *Avena sativa*) hay, lablab ((L) *Lablab purpureus*) hay, or grass ((G) *Andropogon* sp, *Danthonia subulata*) hay or wheat ((W) *Triticum aestivum*) straw each supplemented with 1.3 kg DM of cotton seed cake. Four ruminally and abomasally cannulated steers (190 ± 15 kg) were used in a balanced 4x4 Latin square. The contrasts were : C1 (L vs O and G), C2 (O vs G) and C3 (W vs others). N and NDF contents (g/kg DM) were 7, 21, 11, 5 and 685, 510, 669, 777 for O, L, G and W. Total collection of faeces was used. The flow of N and NDF to the abomasum was estimated using the graphic alternative (McAllan and Smith, 1983, Br J Nutr, 50, 445-454) of the double marker method. Markers were Cr-mordanted straw and CoEDTA (Uden *et al*, 1980, J Sci Food and Agric, 31, 625-632). Manual evacuation of rumen contents were

made on 3 consecutive days (before, 4 and 8 h after feeding). To measure the potential digestibility of NDF in the forages, rumen contents and faeces were incubated in nylon bags for 240 h. Intake of G diets was significantly higher than O and intake of W significantly lower than others. Abomasal N flow (g/g N intake) was not affected although L diets had higher and W lower N intake. L diets had significantly (P<0.05) lower total tract and tended (P<0.1) to have lower rumen NDF digestibility than O and G which is in keeping with the higher indigestible NDF (INDF) pool in the rumen (P<0.001) and the higher amount of INDF in faeces (P<0.05) with L diets. Digestibility of NDF in the rumen (mean 0.61) and total tract (mean 0.62) were similar between G and O diets. Although lablab appeared the best hay owing to its chemical composition, this superiority was not reflected in intake and digestive parameters (N supply, NDF digestibility in the rumen).

| | Oat | Lablab | Grass | Wheat | SEM | C1 | C2 | C3 |
|-----------------------|------|--------|-------|-------|-------|-----|----|----|
| Forage intake (g DM) | 3065 | 3506 | 3619 | 2774 | 144.5 | NS | * | ** |
| N in feed (g/d) | 122 | 175 | 140 | 114 | 6.9 | ** | NS | ** |
| N at abomasum (g/d) | 122 | 123 | 126 | 92 | 11.7 | NS | NS | NS |
| NDF in feed (g/d) | 2498 | 2182 | 2813 | 2541 | 81.8 | ** | * | NS |
| NDF at abomasum (g/d) | 969 | 1143 | 1119 | 1282 | 138.8 | NS | NS | NS |
| DNDF pool (g) | 1090 | 871 | 1519 | 1585 | 124.4 | * | NS | * |
| INDF pool (g) | 1036 | 1998 | 1170 | 1435 | 101.1 | *** | NS | NS |