# Dry matter intake and digestibility in different maturity stages of corn

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**Introduction** Among forages used for silage production, corn is one of the best options, because of its high capacity of dry matter production, high energy content, relative ease of fermentation in the silo, and good acceptance by feedlot cattle. However, harvesting plants with inadequate maturity may be one of the reasons for low productivity and low nutritional value of the silage. Thus, this experiment was conducted to evaluate the effects of harvesting corn at different maturity stages for silage production on dry matter intake and digestibility of feedlot cattle.

**Material and Methods** The experiment was conducted at the Instituto Federal de Educação, Ciência e Tecnologia do Sul de Minas Gerais – Câmpus Muzambinho in the city of Muzambinho – MG. The experiment was conducted in a randomized complete block design, in a 2 x 4 factorial scheme, with two hybrids and four maturity stages. The hybrids were Agroceres 4051 (AG 4051) and Pioneer 30F90 (P 30F90) harvested at four maturity stages: without the milk line-(WML), 1/3 of milk line (1/3 ML), 1/2 of milk line (1/2 ML) and 2/3 of milk line (2/3 ML). The statistical analyzes were performed using the statistical software SISVAR and the means were compared by Scott-Knott (5%) test.

**Results and Discussion** It was noted that there was variation in DM digestibility (Table 1). The digestibility was positively correlated with advancing maturity of whole plant corn and there was no effect of hybrids. The highest digestibility coefficients were observed for 2/3 ML stage for both hybrids.

Dry matter intake is shown in Table 2. Regardless of the form of expression of the dry matter intake, the hybrids did not affect consumption, no statistical differences ($P > 0.05$) for silage hybrids studied. An increase in dry matter intake in that evolution occurred on maturation of the whole plant corn for all consumption characteristics evaluated. The best results in dry matter intake in kg / animal / day were obtained on maturation of 1/2 and 2/3 milk line, no differences ($P > 0.05$) from each other, but were different from other.

**Conclusions** Maturity stages for corn harvested for silage influence the performance of Nellore steers on termination. Harvesting maize plants at ½ milk line and 2/3 milk line is recommended for silage production.

**Table 1** *In situ* dry matter digestibility of corn silages according to maturity stages

| | Maturity stage | | | | |
|---|---|---|---|---|---|
| Hybrid | WML | 1/3ML | 1/2ML | 2/3ML | Average |
| AG 4051 | 44.24Ac | 44.14Ac | 52.60Ab | 58.37Aa | 49.84A |
| P 30F90 | 45.19Ab | 51.37Aa | 53.15Aa | 57.69Aa | 51.85A |
| Average | 44.71c | 47.76c | 52.88b | 58.03[a] | |
| CV(%) = 10.93 | | | | | |

CV – Coefficient of variation; ML- Milk Line; WML- Without Milk Line; Averages followed by the same lowercase and uppercase letter in the column and row do not differ by Scott Knott's test (P<0.05).

**Table 2** Dry matter intake (kg/animal/day) of diets containing corn silages at different maturity stages

| | Maturity stage | | | | |
|---|---|---|---|---|---|
| Hybrid | WML | 1/3ML | 1/2ML | 2/3ML | Average |
| AG 4051 | 9.13Ab | 9.29Ab | 10.62Aa | 11.68Aa | 10.18A |
| P 30F90 | 9.12Ab | 10.05Ab | 10.68Aa | 11.58Aa | 10.36A |
| Average | 9.13c | 9.67c | 10.65b | 11.63a | |
| CV(%) = 11.05 | | | | | |

CV – Coefficient of variation; ML- Milk Line; WML- Without Milk Line; Averages followed by the same lowercase and uppercase letter in the column and row do not differ by Scott Knott's test (P<0.05).