

## **Fibre sorghum: effect of harvest date on six hybrids with different cycle in Central Italy**

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Non-food crops supply the raw material for different production chains: fibre or cellulose, biomass, oils for energy, dyes, starch, etc. Among these crops, sorghum is one of the most interesting since it can provide biomass to be transformed into paper, fibre, ethanol and electricity.

Investigations on fibre sorghum for pulping have been carried out by Cereal Research Institute (Rome, Italy) since 1988.

The effect of three different harvest date (14, 21 and 28 days after flowering) on the production of six fibre sorghum hybrids with different maturity classes (H 128, H 133, H 130, H 16, H 132 and H 202) was investigated.

The field experiments were carried out in 1998 and 1999 in Rome, at Inviolatella farm (41°58' N, 12°28' E). A complete factorial experimental design with three replications was adopted. For each year and plot the following data were recorded: date of emergence and flowering; stem height at last blade joint; stem diameter; aboveground fresh biomass; fresh and dry weight of “stems+sheaths” and panicles.

The average dry matter yield “stems+sheaths” was about 29 t ha<sup>-1</sup>; the high moisture content of biomass (above 70% in every harvest time) get necessary drying the plants in the field before storage.

Statistically significant differences among hybrids were observed for all the traits examined during the two-years experiments. Delaying of harvest significantly increased “stems+sheaths” yield: +7% from 14 to 21 days after flowering; +3% after another week. Hybrid x harvest interaction was not significantly different for dry matter yield.

The correlation between cycle length and dry matter yield was significantly positive for each harvest date. Highest yield was recorded for the latest genotype H 202 (36.6 t/ha), harvested not before the end of September when the field drying of the biomass is difficult. The medium maturing hybrid H 130 seems to be more suitable in central Italy environment because production of about 27 t/ha was obtained 21 days after flowering, before the end of August. Productions of more than 30 t/ha were obtained with late hybrids H 132 and H 16, harvested in the second ten days of September, 14 and 21 days after flowering respectively.