



With technical support of



Food and Agriculture Organization  
of the United Nations

FUNDAÇÃO



## CORN PRODUCTION AND SOIL PROTECTION IN MATO GROSSO DO SUL, BRAZIL

Gessi Ceccon<sup>1</sup>, Valquíria Krolikowski<sup>2</sup>, Priscila Akemi Makino<sup>3</sup>, Felipe Ceccon<sup>3</sup>,  
Luan Marlon Ribeiro<sup>3</sup>, Renato Albuquerque da Luz<sup>3</sup>

<sup>1</sup>Agronomist, D.Sc. in Agriculture, researcher at Embrapa Western Agriculture, Dourados - MS, Brazil, corresponding author: [gessi.ceccon@embrapa.br](mailto:gessi.ceccon@embrapa.br)

<sup>2</sup>Agronomist, postgraduate at State University of Mato Grosso do Sul, Aquidauana, Brazil, [valkrolikowski@hotmail.com](mailto:valkrolikowski@hotmail.com)

<sup>3</sup>Agronomist, postgraduate at Federal University of Grande Dourados - MS, Brazil, [priscila\\_akemi17@hotmail.com](mailto:priscila_akemi17@hotmail.com), [felipececcon92@gmail.com](mailto:felipececcon92@gmail.com), [luanmarlon@hotmail.com](mailto:luanmarlon@hotmail.com), [renatoalbuquerque luz@gmail.com](mailto:renatoalbuquerque luz@gmail.com)

In Brazilian tropical region, the predominant corn production is in the “late season” - autumn-winter - with soybean crop in succession. The work was carried out with the objective of characterizing the “late of season corn” in Mato Grosso do Sul State. From 2007 up to 2015, every two years, participatory rapid diagnosis (PRD) were done with technical assistants and spike samples were collected in representative fields. Direct sowing of corn is predominantly made in clay soils, on soybean straw, with higher proportion in March, but it is been anticipated to February, due to the early soybean harvest. The anticipation of sowing prevent productivity losses due to frost in the South region or drought all over the State. Sowing anticipation improves corn productivity by being cultivated in a period of higher temperature, insolation and humidity, but exposes the crop to pests and diseases. Fertilization was done mostly at sowing, according to soil analysis and harvest expectancy. The smaller doses were used mainly in small properties or in sandy soils, where the soil natural fertility is lower. Bt@ technology, with insecticide to seed treatment, was introduced in most corn crops but did not eliminate the need for insecticide applications. RR@ technology was introduced in some crops of the cereal and decreased weeds infestation but made it difficult to control corn plants in RR@ soybean in succession. The predominant corn line spacing was 0.90 m and has became 0.50 m for providing the best plant arrangement and higher productivity. Plant population increased from 48,000 to 54,400 plants per ha and productivity from 4,547 to 7,751 kg ha<sup>-1</sup>. The area with intercropping corn-*Brachiaria ruziziensis* in Mato Grosso do Sul was inexpressive in 2007 and increased to 34% in 2015, predominantly in the Center-South region of the State. Soil cover (above ground crop residue) was 32% in 2007 and rose to 44.2% in 2015. Corn-brachiaria intercropped is a system that increases soil cover.

**Keywords:** biomass, corn, intercropping, no-till.

**Acknowledgements:** Embrapa Western Agriculture, CAPES, UFGD.