

NITROUS OXIDE EMISSIONS IN EUCALYPTUS PRODUCTION UNDER MONOCULTURE AND INTEGRATED SYSTEMS IN SINOP /MT

Renato de Aragão Ribeiro RODRIGUES¹, Júlia Graziela SILVEIRA^{1,2}, Anna Karolyne NOGUEIRA^{1,2}, Jacqueline Jesus da Nogueira da SILVA^{1,2}, Andressa Alves BOTIN^{1,2}, Mircéia Angele MOMBACH¹, Natassia Magalhães ARMACOLO^{1,2}, Mallú Loyane Arenhart PIROLLA^{1,2}

¹ Embrapa Agrosilvopastoral / Embrapa Soils. Rod. MT 222, KM 2,5. Sinop/MT / Rua Jardim Botânico, 1024. Rio de Janeiro/RJ.

² Universidade Federal de Mato Grosso. Avenida Projetada 02, 1203. Sinop/MT.

E-mail address of presenting author*: renato.rodriques@embrapa.br

Introduction The main cause of climate change is the increase in greenhouse gases (GHG) emissions caused by activities such as agriculture, and nitrous oxide (N₂O) is one of the main gases emitted by these activities. Therefore, the objective of this study was to evaluate N₂O emissions of Eucalyptus urograndis under monoculture and integrated production systems.

Material and Methods

The study was conducted in the experimental area of Embrapa Agrosilvopastoral, Sinop, MT and consisted of monoculture forest (F) with the hybrid Eucalyptus urograndhis (H13) and integrated systems combining pasture and crop to the F. Nitrous oxide samples were taken once a week, from November 2013 to October 2014 by the closed static chamber technique, the concentrations were determined by a gas chromatograph and the fluxes were calculated. During the sampling period, the internal temperature of the camera was measured, using a thermo- hygrometer. The rainfall data were provided by the local weather station.

Results and Conclusions


It was recorded a decrease in the emissions from the rain period to the dry season. In the relationship between monthly flow and precipitation, it was observed that the largest emissions occurred during the rainy season. Smaller flows were observed in the dry season, that was also the period with higher internal temperature rates inside the camera. The temperature did not influence the emissions directly, since its variation was small. It was possible to verify that system integration and eucalyptus monoculture can serve a good alternative N₂O mitigation.

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GHG emissions and C sequestration




 **Renato de Aragão
Ribeiro Rodrigues**

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