

## **RADIATION USE EFFICIENCY ON CAMPOS GRASSLANDS WITH CONTRASTING GRAZING METHODS**

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**Introduction:** In Uruguay, the Basaltic region has de highest proportion of natural grasslands of the country. In this pastures, livestock management is the main reason of degradation of natural grasslands. Today, it's possible to estimate ANPP (Aboveground Net Primary Production) using remote sensing techniques. The RUE (Radiation Use Efficiency) is the effectiveness with which fPAR (fraction of Photosynthetically Active Radiation absorbed by plants) is transformed in ANPP and is known to vary according to temperature, precipitation and species composition. **Objectives;** The aims of this work were: a) to calibrate RUE and b) study the temporal variability of RUE for two contrasting grazing methods. **Materials & Methods:** The study was conducted on five livestock farms located in the Basaltic region. In each site, two contrasting pastures with different historical grazing management (controlled vs continuous stocking rate) were selected. Data was collected between september 2013 and february 2015. RUE coefficient was estimated following Monteith equation:  $RUE = ANPP / APAR$  and  $APAR = fPAR \times PAR$ . ANPP was estimated using the technique of regrowth in three exclusion cages. Biomass was cut at 1cm in boxes 20 x 50cm with shears every 45-50 days and was dried in forced air oven at 60 ° C. fPAR was obtained as a function of ENVI images from MODIS sensor (US Geological Survey) and PAR was estimated from agro-climatic stations of INIA. RUE data were analyzed with a one-way ANOVA and the means were compared with T test for paired samples. **Results:** Between grazing methods, RUE average values were statistically different ( $p < 0.05$ ), with controlled management reporting values above 44%. When analysing seasonal variation between grazing methods, there were no statistical differences in RUE values. Seasonal variation of RUE for each grazing methods separately, was significantly different within seasons ( $p < 0.05$ ). **Conclusions:** The RUE values obtained could be used in the estimation of a more accurately ANPP in natural grasslands of this region.

**Palabras clave:** livestock management, PPNA, grassland productivity

**Modalidad:** Poster