INTRODUCTION
With the advent of fungicides for the soybean disease control, several products are used, standing out the Pyraclostrobin + Epoxiconazole, which have provided increasing of grain productivity, besides an efficient control of the diseases. The field experiment was carried out with the purpose of evaluating the physiological effect of the Pyraclostrobin + Epoxiconazole on the soybean crop.

MATERIAL AND METHODS
- Local: University of São Paulo, Piracicaba, SP.
- Season: 2004/2005
- Evaluations: (i) activity of the enzyme nitrate reductase, (ii) relative production of ethylene, (iii) net photosynthesis, (iv) respiration, and (v) productivity of grains. For the ethylene analysis 10 leaves of the plant were collected completely expanded (upper leaves).

CONCLUSIONS
F500 treatment increased the activity of the enzyme nitrate reductase, reduced the ethylene production for soybean leaves, increased the net photosynthesis, and reduced respiration. Due to these physiological effects, the productivity of the soybeans with one application of F500 (T1) was equivalent to the results with two applications of other fungicide (T4).