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Effects on yield of the reproductive stage length in equal cycle soybean lines

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Photoperiod induces flowering in soybean plants and it also has an effect on the duration of the subsequent phases. In Argentinean core area, trials on equal length cycle soybeans but with different reproductive period duration resulted with higher yields in those lines with the longest reproductive phase. This increase was primarily related to the number of seeds per area unit. Northwestern Argentina (NOA) region differs widely in agro-climatic aspects and other genotypes are planted (determined growth habit (GH) and maturity groups (MG) VII and VIII), which could modify the expected results. Experiments similar to those previously described, were carried out during two seasons in the province of Tucumán, NOA region. In addition, Flowering time (R1) matching trials were conducted to eliminate the photoperiod effect, which modifies the length of the reproductive sub-stages. Similar soybean sibling lines were used, which ones have equal cycle duration but different flowering dates (at least five or more days) and MG VII and VIII. The objective was to assess if similar lines of equal length cycle and different R1, modify their yield and/or its components, and the indirect influence of photoperiod on the generation of these parameters.

The first trial determined that yield showed no statistical differences on both seasons but a slight tendency to increase in shorter reproductive period lines, especially under unfavorable environmental situations. The yield components did not present statistical differences either.

The synchronized R1 trial showed that shorter reproductive period lines presented higher yield values.

Both trials presented similar results, demonstrating that yield trends will remain beyond the indirect photoperiod influence on the duration of post-flowering sub-stages.