

Initial interference of barnyardgrass with the growth of rice variety INIA Tacuarí under nutritional restrictions

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The initial interference of the system *Echinochloa crus-galli*–*Oryza sativa* was evaluated by the treatments of *O. sativa* 100% (Or), *O. sativa* 65% and *E. crus-galli* 35% (Orl-Ecl), and *E. crus-galli* 100% (Ec) cultivated in complete nutritive solution of Kimura B or modified to have 1/4 nitrogen (Ns) or 1/4 phosphorus (Ps) or 1/4 nitrogen and 1/4 phosphorus (Ns, Ps). Measurements were made of the height variation of the plants, root length, dry matter weight of the aerial part and of the root system, and the absorption of N and P.

At the 19th day after transplanting, *E. crus-galli* produced meaningful interference with the height and dry matter production of the aerial part of *O. sativa*. In the treatments with lacking levels of N and P, it was observed that the height of *O. sativa* was more affected by the effect of N than by that of P in the interference of *E. crus-galli*. The deficiency of N affected the dry matter production of the aerial part and roots of *O. sativa* and *E. crus-galli*, with a proportionally greater effect in the latter. The deficiency of P did not affect the dry matter of the roots of *O. sativa*.

P deficiency significantly reduced the dry matter of the aerial part and roots of *E. crus-galli*.

The absorption of N and P by the two species revealed that, in the initial phase of cultivation, the requirements of N and P for *E. crus-galli* were greater than for *O. sativa*. In addition, the effects caused by the lower level of both N and P affected *E. crus-galli* in a greater proportion. The absorption of N and P, expressed in mg per g of dry matter, was more affected by the nutritional stress in *E. crus-galli* than in *O. sativa*. A greater power of recovery of P absorption when the two species received lower levels of N was observed in *O. sativa*.

It is important to note that the effects caused by the interference and by the nutritional stress began to be visualized at the 8th to 12th day.