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MIRCOSATELLITE MOLECULAR MARKERS IN THE EVALUATION OF SOYBEAN SEEDS WITH VARIATION IN HILUM COLOR

Document prepared by experts from Brazil

Microsatellite markers have been used in determining genetic purity in breeding programs and seed production to ensure seed genetic quality. We demonstrate, with the aid of microsatellite molecular markers, that changes in the hilum color of soybean seeds are not necessarily related to genetic variation (Rabel et al., 2010). Seeds of the CD 222 variety, showing a black hilum, and of two breeding lines (CD 02RV-8444 and CD 01RV-7618) showing a brown hilum, were evaluated. Seeds with color variation in the hilum of each genotype were visually separated into groups. The DNA of each seed was extracted and analyzed with microsatellite markers in DNA "bulks" of five seeds. The color variation found in the hilum of CD 222 and CD 02RV-8444 seeds did not show any genetic variation based on 16 microsatellite loci. For the CD 01RV-7618 line, the bulk of seeds with a brown-black hilum (B1), with an intense brown hilum (B2) and with an intermediary brown hilum (B3) showed the same molecular pattern. The seeds from the same line with a faint brown hilum (B4) showed a difference with the locus Satt070. Of the five seeds of this bulk, two showed the same molecular pattern of the other bulks at the same locus. The remaining seeds were considered mixtures. The use of microsatellite markers demonstrated that variations in color or tone of the soybean hilum do not always correspond to genetic variation.

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Reference

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