Breeding Salt Tolerant Kentucky Bluegrass with Somaclonal Variation. (C05-zhang153420-Oral)

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Abstract:

Less fresh water available for irrigation and increasing soil salinity make the salt and drought tolerance breeding in cool season turfgrasses an urgent task. However, lack of good germplasm and apomixis largely impede the progress of salt and drought tolerance breeding of Kentucky bluegrass. Based on our high efficient embryogenic callus culture and regeneration system, a screening procedure for salt tolerant mutants has been established through adding 0.7% NaCl in embryogenic callus culture medium. Eighty-five 0.7% NaCl tolerant mutant lines have been screened out from those calli which came from over 1,200 seeds producing embryogenic callus. Forty of 85 lines showed stable growth on 0.7% NaCl added medium after 3 round screen. And 33 regenerated lines were finally obtained. Preliminary greenhouse tests indicated that 7 of 15 lines in drought tolerance test showed significant improvement. Eleven of 21 lines in hydroponic culture supplemented with 1.0% NaCl showed significantly better salt tolerance. These results indicate that selecting salt and drought tolerant mutants of Kentuchy bluegrass through somaclonal variation is available.

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