SDS-ELECTROPHORETIC INVESTIGATION ON SEED ALBUMINS OF SOME PISUM GENOTYPES

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The electrophoretic seed albumin patterns of nine genotypes from Gottschalk's collection were analyzed, including the mother variety (IL), the stem bifurcated mutant 1201A (bif-1)f, the fasciated mutant 489C (more than 18 mutant genes), and six recombinants (RM 20D, R 46C, RM 427, RM 432, RM 836, and RM 1126) (Table 1).

Table 1. Origin and characterization of the recombinants.

Genotypes	Parents	Characteristics
RM 20D	489C x R 46C	bif-1 (100%), efr, fasciated, long III
R 46C	1201A x 46A	bif-1 (reduced penetrance), efr
RM 427	176A x R 862	bif-1 (reduced penetrance), dim, short I
RM 432	489C x R 177	bif-1 (100%), sg, long III
RM 836	445A x R 46C	bif-1 (reduced penetrance), efr, waxless
RM 1126	Natural cross pollination	bif-1 (reduced penetrance), ion, long III

The albumin fraction was extracted with 0.5 M NaCl (pH 6.85) and dialyzed against water. Electrophoretic analysis was performed on SDS-polyacrylamide gel.

The albumin proteins of mutant 1201A, recombinants R 46C, RM 427, and RM 836 all gave banding patterns similar to that observed for IL. A prominent doublet with molecular weight of 67.5 Kd may be easily seen in this pattern (Fig. la). In contrast, the albumin pattern of RM 1126 exhibited only faint bands in this region. This difference appeared to be of a quantitative nature. Qualitative variation in the albumin patterns was not observed among the above lines although these lines differed in a number of morphological characters.

An additional band (MW about 67.5 Kd) was present In three genotypes (489C, RM 432 in Fig. lb and RM 200 in la). The albumin patterns of these lines also exhibited a number of small quantitative differences. Further studies must he performed to characterize these differences.

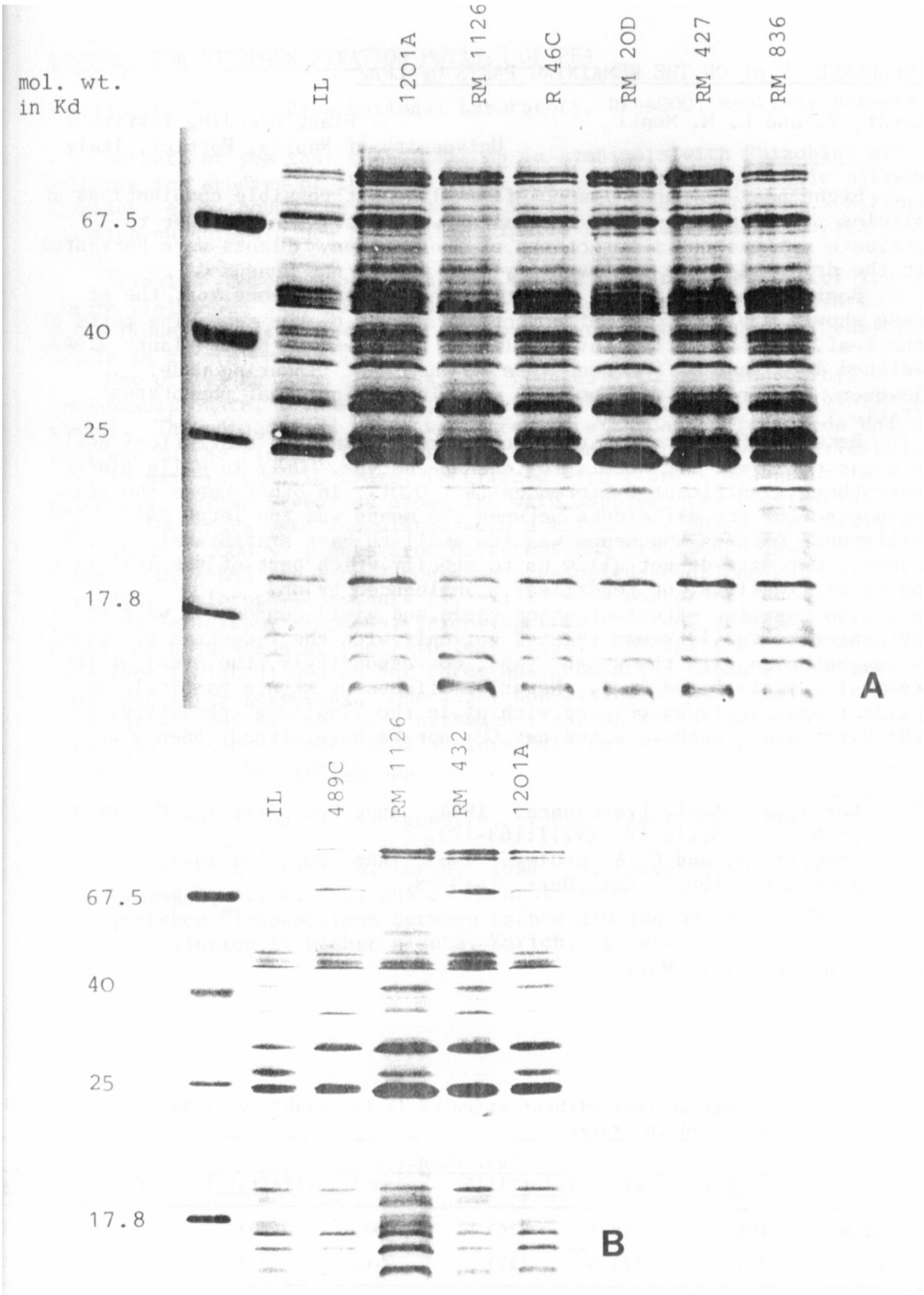

Fig. 1. SDS-electrophoregrams of seed albumins in the stem bifurcated mutant 1201A, the fasciated mutant 489C, and six recombinants compared with the IL.