SEED COAT DEVELOPMENT AND ITS EVOLUTIONARY IMPLICATIONS IN DIPLOID AND AMPHIDIPLOID *BRASSICA* SPECIES

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Variations in seed coat patterns are successfully employed in the establishment of evolutionary relationships. This research addressed the evolutionary implications of the anatomy of the developing seed coat in amphidiploid *Brassica* species. Light microscopy was used to study the development of seed coat structure in six species (15 accessions): three amphidiploids and their three diploid parents. Four types of epidermis layer, six types of subepidermis and nine types of palisade layer could be recognized during the course of the seed coat developmental process. The types of epidermis and subepidermis layers in diploids and amphidiploids changed similarly during seed development. Although there was little difference in the types of palisade layer among the accessions of diploids and amphidiploids at the early stages, many particular types appeared in these species at middle and later developmental stages. Palisade layer development varied in complicated ways in amphidiploids. Some accessions showed palisade layer types intermediate between the two putative parents, while others resembled only one of the two diploid ancestors. The developmental types of epidermis and subepidermis did not show the relationships between amphidiploids and diploids. However, the development of types of palisade layer apparently can serve as an excellent character indicating the seed coat evolution of amphidiploids.

Key words: *Brassica*, diploids and amphidiploids, seed coat anatomy, seed coat development.