

The potato: evolution, biodiversity and genetic resources

Author(s): Hawkes, J. G.

Author Affiliation: University of Birmingham, PO Box 363, Birmingham B15 2TT, UK.

Book : The potato: evolution, biodiversity and genetic resources. 1990 pp.viii + 259 pp. ref.7 pp.

Abstract: Professor Hawkes' definitive botany of the tuber-bearing *Solanum* species, last revised in 1963, has been expanded, completely rewritten and updated to take into account recent advances in potato taxonomy. Much of this new knowledge has been gained as a result of numerous germplasm collecting missions, many supported by the International Potato Center (founded in 1972). The book has 7 chapters, the first being a general introduction. Chapter 2 charts the ancient origins of the potato in South America, using evidence from ceramics, archaeological remains, historical accounts and nomenclature, while chapter 3 describes the spread of the potato throughout Europe and the rest of the world. The fourth chapter covers cytology and reproductive biology, concentrating on ploidy levels, meiosis in species and hybrids, genome relationships, crossability, embryo balance number and F₂ hybrid analysis. The evolution of the potato (*Solanum* section *Petota*) up to and subsequent to its domestication is described in chapter 5. The sixth and largest chapter (pp. 62-197) is a detailed account of potato systematics and biodiversity. Section *Petota* is treated in subsections *Estolonifera*, with 2 series, and *Potatoe*, with superseries *Stellata* (9 series) and *Rotata* (10 series). The 235 species recognised, only 7 being cultivated, are described. For each species details are given of author and original description, synonymy, distribution, habitat and altitude, derivation of the Latin name, chromosome number and embryo balance number, salient characteristics and sources of available living material. The final chapter examines the value of genetic resources as sources for breeding for resistance to virus, fungal and bacterial diseases, insects, nematodes and abiotic stresses. The history and status of germplasm collection, gene banks and germplasm evaluation are outlined. Appendices cover (1) names not included in the taxonomic treatment; (2) tabulated data on the classification, ploidy and country of origin of the better-known members of section *Petota*; (3) a glossary of terms; and (4) series, species and subspecies names, listed taxonomically, with their standard abbreviations. There is also a subject index. Although the subject matter of the book may make it seem essential reading for only a very small group of specialists (potato taxonomists), the highly readable style should endear it to a wider audience.

ISBN : 1852930454

Record Number : 19901615687

Publisher : Belhaven Press

Location of publication : London

Country of publication : UK

Language of text : English

Language of summary : English