A multimedia approach to computer aided identification and its application in determining the major weeds of Reunion island : AdvenRun V.1.0

T. le Bourgeois[*], E. Jeuffrault[‡], P. Grard[§] & A. Carrara[*]

The difficulty encountered by non-botanists when identifying weeds using standard flora is centred around three major constraints, namely:

•The ability to identify the weeds without its flowers or before it flowers;

•The use of dichotomous key, which cannot tolerate any error and imposes the choice as well as the order of questions; and

•The use of technical terms not understood by the non-specialists.

In order to minimise and resolve these constraints, the identification system in the CD-ROM uses a graphical system which reconstitutes the plants using images. This method has several advantages:

•It only uses drawings instead of technical jargon.

•It provides users the freedom to choose the character that needs to be described.

•Missing information or data are permitted, thus allowing for the identification of incomplete samples.

•Certain level of observational errors are also tolerated.

•At each step of the identification process, a probability of resemblance is calculated for each species. Thus species are sorted by decreasing order of similarity.

•At each step and moment, users could access the photos, the description, and the botanical illustrations of the species.

•All the technical terms used are highlighted and at a click, an hypertext illustrated definition is accessible.

•In case users encounter doubt in the choice of characters (for description), they could ask the program for the most pertinent one.

•If the probability of a species identified is less than 100 percent, the program indicates the characters that contain bad description.

•Descriptions of the species can be available through Internet Website with any type of browser.

All the documents are printable
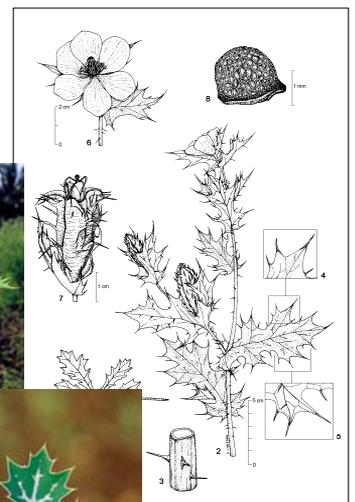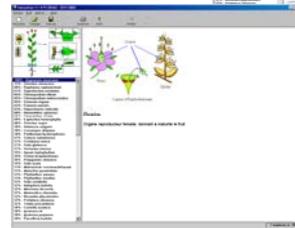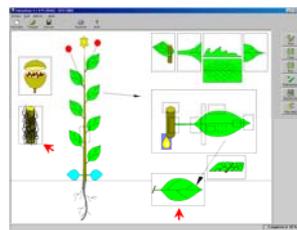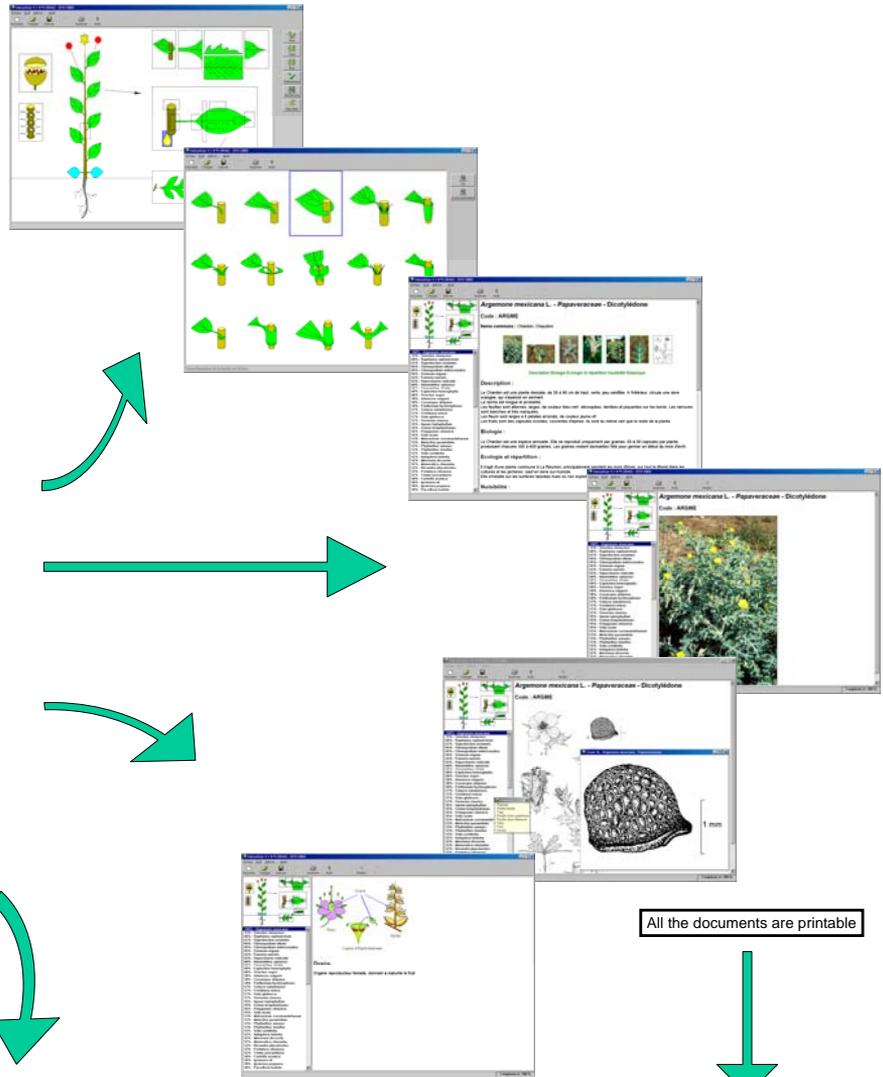
A tool for :

•Species identification for biodiversity studies
•Young scientist training and capacity building
•Information dissemination

Applications on :

•Western Ghâts trees, shrubs and lianas
•Flora of mangroves
•Pollen *taxa* of south India

[*] CIRAD-CA / GEC, TA 74/09, F34398 MONTPELLIER Cedex 5 - FRANCE

[‡] Direction de l 'Agriculture et de la Forêt, Service de la Protection des Végétaux, 2 Route Ligne Paradis, 97410 Saint Pierre (La Réunion) - FRANCE

[§] French Institute of Pondichery, 11, St Louis Street - Pondicherry 605001 - INDIA