A MANUAL SYSTEM FOR GERMPLASM DATA MANAGEMENT.

I. DESCRIPTION OF THE EDGE-PUNCHED CARD SYSTEM

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SUMMARY

A manual system for the management of data in a plant genetic resources center is described. The edge-punched card and other additional equipment of the system are discussed, exemplified by a description of the system used at CATIE, Costa Rica. The possibilities and utility of such a documentation system in a genebank are discussed.

INTRODUCTION

One of the functions of a plant genetic resources center is documentation, a process of compiling, selecting, classifying, storing and recovering information. In this paper, documentation is used as a synonym for ‘information (retrieval) system’ and ‘germplasm data management’. Although these terms are frequently associated with the use of a computer, manual systems based on common index cards (or more effectively on punched cards) can fulfill several or even all of the requirements of a data management system at much lower cost.

Examples of the use of punched cards in the management of botanical data are: CASEY et al. (1958) for literature searching in breeding and genetics; SCHULTZ (1962) in breeding work; MOSS & BROWN (1977) for the identification of potato cultivars; PANKHURST (1978) for developing multi-access keys for identification purposes; WOOD (1957) in taxonomic research; and ZEVEN (1972) for the management of the data from small collections. Other disciplines, such as chemistry and linguistics, and especially, routine library work also use the punched cards frequently.

In the regional Plant Genetic Resources Unit at CATIE, Turrialba (Costa Rica), a complete set of edge-punched cards was developed to collect, store and facilitate retrieval of basic germplasm data. A short description of the several components will be given in this paper. ENGELS et al. (1981) present the use of the edge-punched cards for handling crop-specific data, illustrated with the results of a systematic description of the CATIE cassava collection.

It is found that edge-punched cards for handling data of small germplasm collections can still compete with or are even better than a computer in aspects such as costs per
accession, efficiency of personnel and data management, and flexibility of the system (Engels, 1980).

**DESCRIPTION OF THE EDGE-PUNCHED CARD AND ITS EQUIPMENT**

In comparison with common card files, the advantages of handsorted punched cards are numerous (Fowler, 1965; Jimenez, 1967; and Wood, 1957). Casey et al. (1958) described several types of edge-punched cards, including the Keysort, the E-Z Sort, and the Unisort Systems. All these systems have in common that the information is retrieved with a needle (see Fig. 1). In each card the card margins carrying the data of several descriptors of one accession are notched. Another type of systems is based on the principle of the optical coincidence. In this type each card contains all the accessions of a certain collection and represents only one descriptor state or

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*Fig. 1. The basic equipment of a manual edge-punched card system, including card savers, sorting needle, hand punch, alignment block and card-file boxes.*