ment Act, administered at the local government level. The consent to use agrichemicals will normally have conditions attached, one of which often is that the agrichemical user holds the appropriate GROWSAFE® Certificate.

The GROWSAFE® certificate is a personal qualification and there is the assumption that because the Certificate holder now knows what is required, they will adopt best practice. However to achieve safe responsible and effective agrichemical use, the user must also have the appropriate equipment and facilities. To satisfy this requirement the Trust also runs the GROWSAFE® Accreditation Programme. This involves ongoing formal auditing of the commercial operation using agrichemicals.

CONCLUSIONS

There will continue to be technical developments in the handling and use of agrichemicals, almost all to do with increased precision, which in turn leads to safer use both environmentally and from the human health viewpoint. There will also be change in response to customer demands. The Trust itself is currently undergoing a major review, the central reason being to determine whether or not they are meeting the needs of their customers.

Propagation of Several Plants Threatened with Extinction©

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INTRODUCTION

In Japan, the numbers of plant species threatened with extinction have been increasing through various forms of environmental destruction. To protect the plant species from extinction, Environment Agency of Japan published a red data book in 1997. In this book, plants were classified into five categories; extinct, extinct in the wild, critically endangered, endangered, and vulnerable. The total number of vascular plants listed in these categories was 1428. The Environment Agency also showed that several factors were driving these plants to a crisis point or extinction. The largest factor is development in rural regions. The second is theft from the wild for private interests, and the third is change in vegetation. From the point of view of environmental protection and conservation of plant species, we have studied propagation of several plants threatened with extinction.

PROPAGATION OF THREATENED SPECIES

In vitro propagation of *Dionaea muscipula* Ellis and *Primula sieboldii* E. Morr. were presented at the IPPS Conference in Miyazaki Japan (1995) and at that in Odense Denmark (1998). In addition, propagation of *Pecteilis radiata* (syn. *Habenaria radiata*) from aseptic seeding was presented at the I.P.P.S. Conference in Chicago (2000). The present paper summarises in vitro propagation of *Drosera* species, *Osbeckia chinensis* L., and adaptation of *P. radiata* when restored to the original wild habitat.

Leaves taken from *Drosera* species grown in vitro were used as explants. After 14 days of culture on the hormone-free medium, red protuberances were formed on the distal part of the explant. These developed into adventitious shoots resulting in the formation of rosettes. Benzyladenine in the medium suppressed this morphogenesis. After acclimatisation the regenerated rosters were grown in a greenhouse. After acclimatisation for 2 to 3 months, flowering was observed at the top of the elongated flower stalk.

Seeds of *O. chinensis* were aseptically sowed on hormone-free MS medium (Murashige and Skoog, 1962). After germination, enhanced induction of axillary shoots from the plantlets was observed. It could be estimated that more than 100 shoots were formed from one plantlet during 4 months of culture. The half-strength MS medium without hormone was favourable for rooting and further elongation of roots. After acclimatisation the plants were grown in a greenhouse and came into flower at the end of August. The flowering season was the same as that of wild plants in the indigenous habitat.

Pecteilis radiata derived from aseptic seeding was grown in a greenhouse. Seed had been collected from pods on indigenous plants in the wild habitat. After 10 to 11 months, the regenerated plants were restored to the wild habitat. In mid-August, of the following year after restoration, flowering began slowly then gradually increased and continued until mid-September. The amount of flowering and the length of flowering of the restored plant colony was similar to that of the colony indigenous to the wild habitat.

LITERATURE CITED

Murashige, T. and **F. Skoog.** 1962. A revised medium for rapid growth and bio assays with tobacco tissue cultures. Physiol. Plant. 15:473-497.