Mohwa, Karanj, Kusum and Undi seeds have been collected during the 70s. The total estimated potentiality is of the order of 7.61 million tonnes against which 4.3 lakh tonnes of seeds have reported to have been actually utilised by the various agencies involved in the collection, processing and utilisation. Some more minor oilseeds siz. : Pilu, Dhupa, Nahor and Kokum have also gained momentum in achieving the commercial status during 70s. Some newer oilseeds have also been included in the collection schedule of the minor oilseeds viz. : Palas, Chirandi, Teak-wood and Tumba.

The people to whom these seeds are accessible are not very enthusiastic to collect them mainly due to the fewer or less returns for the labour inputs. Secondly the season generally coincides with the beginning of the monsoon and when the agriculture season is in full swing.

The conventional operations have to be adopted for removing of the rind/pulp manually or by dumping the fruits in ash or soil for a couple of days and by subsequent trampling, rubbing and winnowing. The decortication operations are being carried out using the local contrivances and also the power decorticators. The crushing operation is done in Mini Expellers, Baby Expellers and Big Expellers depending upon the local initiatives. The oil cakes and the low oil bearing non-edible tree borne oilseeds are subjected to solvent extraction processes.

The main bottle-neck in not achieving the desired result in boosting the collection activities is the non-availability of the processing equipments and facilities contiguous to the areas of collection and availability of tree borne oilseeds. Presently the concentration of oil expellers and solvent extraction units are such that they are only in the vicinities of coastal areas, big cities and the areas where commercially large quantities of ground-nut, mustard, cottonseed, till, curdi, castor and other oilseeds of agricultural origin are transacted. This has been described in a separate table.

Presently there is an idle capacity to an extent of 50% prevailing in the country in both the expeller installed capacities as well as solvent extraction installed capacities. Therefore it is suggested by properly re-orienting the location of the oil extraction units in the country it is possible to raise the figure of collection, extraction and utilisation of the less known oilseeds to a greater extent provided the statutory concessions and encouragements given for re-location of these extraction units without altering the number of units.

So far in as a result of researches carried out in various Research Institutes as well as Universities, it is understood that at least 150 tree borne oilseeds have been identified among these the composition of 75 seeds have been established. If a proper attempt is made for organising the collections on a large scale with proper coordination of transport, pre-processing and oil extraction facilities it would be quite possible to reach a collection target of 10 lakh tonnes of non-edible oilseeds during 1980s.

4. USE OF TISSUE CULTURE IN DEVELOPMENT OF COCONUT AND OTHER OILSEEDS

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Rapid propagation of elite selections and hybrids through tissue and organ culture has become a valuable tool in several economic crop plants and ornamentals. However, work on oilseed crops has been limited. Among the perennial oilseeds, oilpalm and coconut tissue cultures have been attempted in a few laboratories in UK and India. Thus, the Unilever Research

Laboratory in Sharnbrook, England have raised a large number of plants from selected hybrids in tissue cultures of seedlings and these have been planted successfully in Malaysia. Similarly, in coconut, attempts have been in progress in UK and at our Institute to induce shoots from floral primordia in artificial media with some promising results. Embryo cultures have also been used with good success to produce large numbers of "makapuno" coconut palms in the Philippines where this recessive mutant is highly priced for its soft gelatinous endosperm which is used as a delicacy. We are attempting to use embryo cultures in coconut for the induction of multiple suckers so that prepotent palms can be multiplied rapidly, since otherwise one embryo would give only one palm. Both suckering as well as bulbil-shoot formation are known to occur as freaks in coconut and hence it is reasonable to expect these to be induced under appropriate experimental conditions of tissue culture.

In annual oilseed crops, some limited amount of tissue culture work has been done on rape in Canada and Germany for clonal propagation as well as production of haploids through anther culture. This has tremendous significance for crops like sunflower for the production of pure lines for exploitation of hybrid vigour. Limited work has been initiated in India both on sunflower as well as in groundnut both for haploidy and embryo culture for obtaining distant crosses. Thus, we can say with confidence that the field of plant tissue culture has come of age in our country and the future holds great and exciting possibilities in the perennial and annual oilseed crops, where the breeders have a wide research gap to fill in order to realise their vast untapped production potential.

The other future challenge is the exploitation of microbial sources of fats and oils which would become increasingly important with the progressive shrinkage of agricultural land that has to produce more and more from less and less area, to feed the ever increasing population. A survey of the different sources of microbial fats shows the enormous variability and potential that can be exploited especially because microbes can be handled under controlled conditions and directed to produce desired end-products in required quantities. Details of these problems and possibilities will be discussed in this paper.

5. TECHNOLOGICAL PROCESS DEVELOPMENTS

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The minor oils are mainly derived from tree borne oilseeds. The important seeds in this class are Mowrah, Mango, Sal, Neem, Karanj, Kusum, Khakhan, Kokum, Nahor, Undi, Pisa and Dhupa. The collection of these seeds is increasing year after year, but even today on an average, only 25 per cent of the potential availability is being collected. The difficulties in processing the minor seeds are as follows:—

(1) Depulping
(2) Drying
(3) Dehulling
(4) Pelletising before solvent extraction
(5) Expression in expellers.

After the oil is extracted, depending on the end use of the oil and the type of lipid present in the oil, different types of treatment have to be