ETHNOBOTANY : OLD SCIENCE – NEW DISCIPLINE

Ethnobotany – *Ethno* = nation or race and culture; *botany* = plants

Research on the useful plants of a culture

Isolated cultures offer the best opportunities for ethnobotanical research

Ethnomedicine (subdiscipline) – Medicinal plants used by a culture

What Ethnobotany Attempts to do

Investigate	Analyze	Conserve	Teach
Record	Describe	Publish	Collect

Other Disciplines Important in Ethnobotanical Research

Language of the people

Politics of the area – community approval, government approval of studies, permits

Geography of the area

Anthropology of the people (belief systems, religion, origin, etc.)

Botany of the area – taxonomy = classification and identification of plants, collections of voucher specimens, distribution of collections, etc.

Medicinal Chemistry

Levels of Research

Taxonomy of medicinal plants – collecting and identifying plants; preservation and distribution of voucher specimens. Literature research for published information on medicinal species

Natural Product Chemistry – extraction, identification, and assay of compound

Pharmacology – drug interaction, experimental work with lab animals, drug modeling

Pre-Clinical Trials

Clinical Trials

Drug Approval (USDA and others)

Market   (10-plus years, $200-plus million)

Ethnobotanical Ethics

Intellectual Property of the society

Culture contamination

Exploitation of culture

Conservation - of culture, property, plants and habitat, language, and technology of indigenous people

THE ETHNOBOTANICAL APPROACH TO DRUG DISCOVERY

Ethnobotany – the study of the relationship between plants and human cultures and societies.

Of an estimated 265,000 flowering plant species on earth less than 1 percent has been studied exhaustively for their chemical composition and medicinal use.

Methods of selecting plant species for study of medicinal value

1. Random survey. Choose species at *random* for drug analysis.

2. Phylogenetic survey. Choose species within those *families* known as drug producers.

3. Ecological survey. Choose *ecological areas* where drug species commonly occur.

4. Ethnobotanical survey. Choose species *currently used by healers* within a society. This method has proven to be the most productive. For best results:

   A. The society should be located in a *floristically diverse* area.
      ●The tropical rain forest is an ideal location.

   B. The society should have lived there in the region for *many generations.*
      ●There must be ample time and opportunity to explore and experiment with local plants.

   C. The culture must have a *tradition of oral history* where healers transmit knowledge from generation to generation.
      ●Use of species for an ailment over millennia generates information similar to that produced by large-scale clinical trials.