Erythrina Has Many Uses

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Mark MacLachlan in Wolaitta (Saddu) Ethiopia writes, "We have a tree here that farmers find very useful, but I haven't seen much about it in other literature. I wonder if it wouldn't be useful to others in other countries. It is *Erythrina abyssinica*. Primarily it is used as a live fence that produces fodder, fuel, intestinal medicine, and is said to fix nitrogen. It is propagated as a fence by putting in cuttings–even as large around as a man's upper arm. The cuttings sprout and grow. Farmers gather the leaves to take to their cattle in the stalls. The species has small thorns, though not so many that they hinder collection of leaves for fodder. It isn't particularly fast growing, but, because it establishes so quickly, fast growth is not as necessary for fencing purposes. It is also said to be resistant to fire and termites. Seed generally has a low germination rate–but once some trees are established, vegetative propagation is simple in the proper time of year. A species with similar uses is *Erythrina brucei*, found only in Ethiopia."

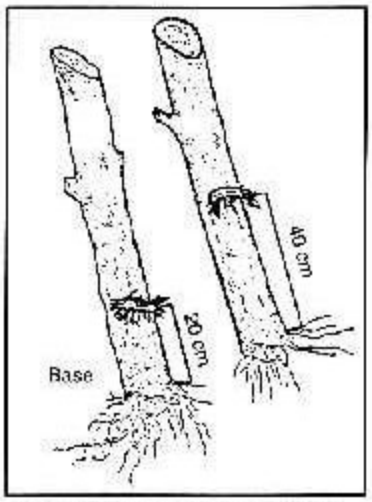
The tree genus Erythrina is a very diverse one and, as MacLachlan describes, one which has many potential uses. The many benefits of the genus have been outlined in a field manual called Erythrina: Production and Use (review follows). The manual covers production techniques that are in use or have been studied.

Descriptions of growth range and patterns of the 115 different species occupy most of the manual's first chapter. There are Erythrina species in Asia, Africa, and in the Americas. The manual lists some of the better-known common names and their areas of origin, but gives little space to the identifying characteristics of species.

The second chapter deals with the establishment of plants by seed or cuttings. Diagrams and explanations of how and why scarification is needed are easy to read yet quite complete. Seed inoculation also is covered with easy-tofollow instructions using simple tools. The best time and size for taking cuttings for vegetative propagation are also well discussed.

The following excerpt describes vegetative propagation of stakes 1.5 m or longer:

"After cutting, [the stakes] may be planted immediately or stored up to two weeks in a cool, shady place. They should be stored in a vertical position–not piled on top of each other or laid directly on the ground. In preparing Erythrina stakes, the top (apical) cut should be made at a 45° angle.... Because Erythrina species sometimes have hollow stems, the top cut should be covered with paraffin, plastic, mud, or



Incisions near the base of cuttings stimulate superficial root growth
Source: NFTA.

other material to avoid accumulation of water. This is especially recommended for species with low survival rates from vegetative cuttings. In Costa Rica, establishment of *E. poeppingiana* cuttings was increased by 22 to 50% by sealing the top cut with paraffin."

"In some cases, it is useful to make incisions in the bark (to the cambium layer) near the base of the cutting in the area that will be just below the soil surface when the cutting is planted. This serves to enlarge the area of callus formation and stimulate the production of superficial roots. Because the base of the stake will be planted as much as 50 cm below the soil surface, young roots may suffer high mortality due to lack of aeration or water logging. By stimulating callus and root formation near the soil surface, it is often possible to improve cutting survival considerably."

Subsequent chapters explain the many different uses of the genus. Discussions of Erythrina in alley cropping and shade cropping are given along with lists of the species that grow best in these different cropping practices. Use of certain species as living fence posts is discussed, along with some benefits, management practices, and problems of the technique. Also given are explanations of different feeding practices involving Erythrina fodder (Erythrina foliage is palatable to most animals, although it should not be used as a complete diet). Briefly discussions of medicinal, lumber, handicraft, human food, ornamental, fiber, dye, and windbreak uses are included in the manual.

The concluding chapters deal with pests and diseases (some of which cause significant harm) along with seed collection and storage. No pest control information is given, although a list of the types of pests commonly found in several regions is given.

Overall the field manual is an excellent guide to the diverse uses of *Erythrina spp*. A significant drawback is that it provides limited help in identifying species.

The Nitrogen Fixing Tree Association was discontinued in 1999 and this 55-page publication is no longer available. Field manuals on other nitrogen fixing trees such as *Leucaena*, *Gliricidia* and *Sesbania* are available at

http://factnet.winrock.org/factnet.htm

ECHO has seed of *E. berteroana* and *E. poeppigiana* available in our seedbank. These two species are native to the Americas. We encourage people elsewhere to try locating local species of Erythrina for experimentation before ordering these for introduction. Trial packets of E. berteroana and E. poeppigiana are free to those working with small farmers overseas.

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