



PLUMERIA PROPAGATION

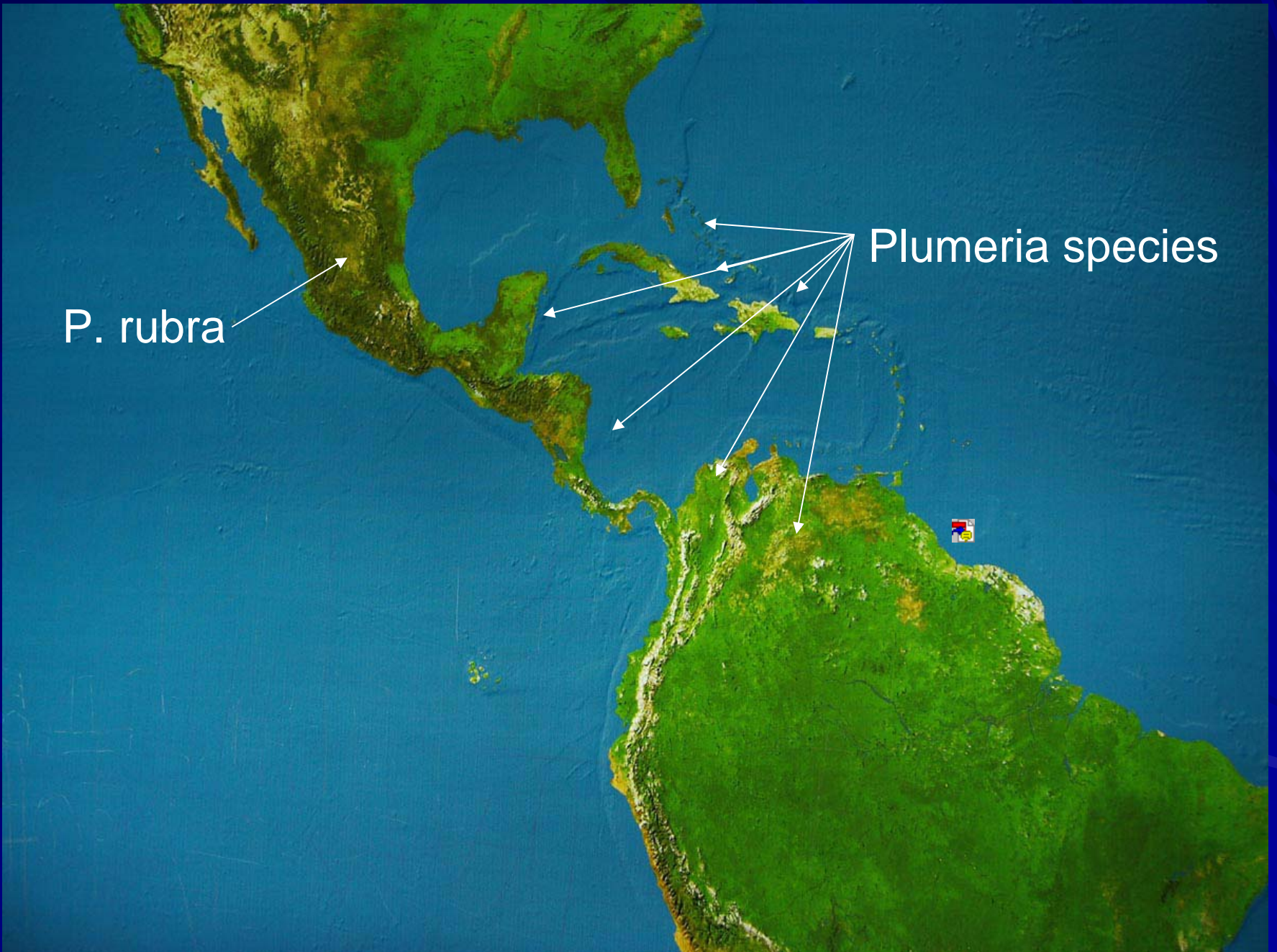
Richard Criley, University of Hawaii

ASHS 2011



P. rubra

Plumeria species





Plumeria species



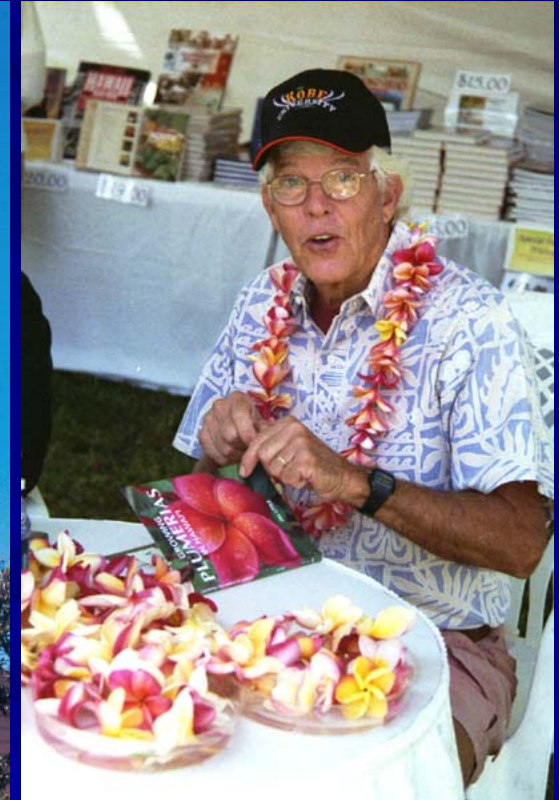
Plumeria – popular lei flower



Donald Angus,
benefactor



Kamehameha statue
at Hawi



Jim Little, author,
nurseryman

Plumeria propagation by seed



Seeds are borne in paired fruits called follicles



Open follicle



Seed planted vertically with the wing sticking out. Vermiculite-perlite medium. Germ. 8-10 days

Plumeria seeds of different sizes, wing shapes, and colors when mature





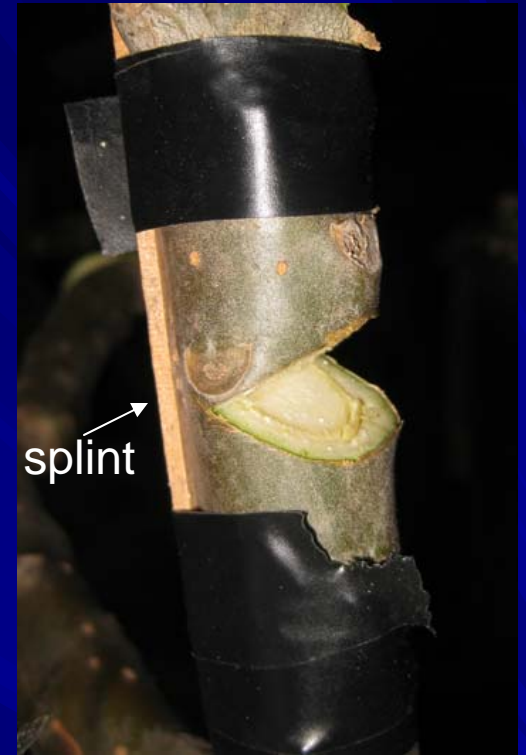
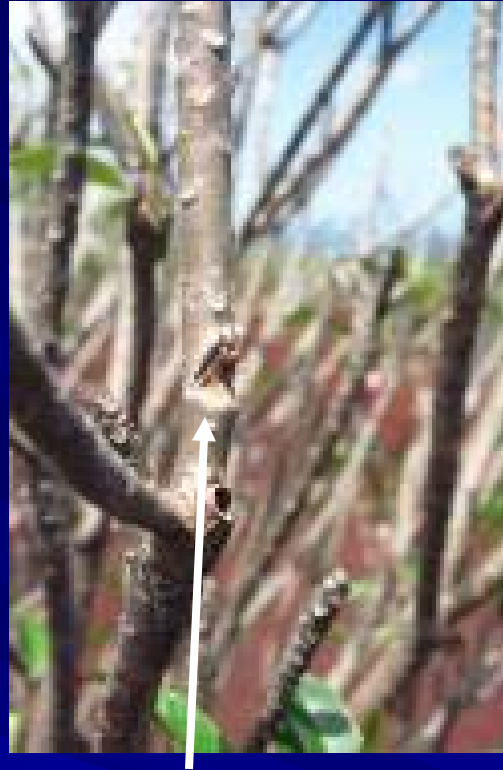
L: Seedlings ready to transplant
R: Seedlings in tray pots

Rooting of cuttings



Rooting hormones not necessary, but can improve speed of rooting. A hormone such as Dip N Grow at a dilution of 1:5 (2500 ppm) is adequate. Rooting hormones may be necessary for species that are more difficult to root than *Plumeria rubra*.

Girdle or notch
3 to 4 weeks in
advance of
taking cutting



A notch cut into a branch stimulates callus production and better rooting on difficult-to-root cultivars.

Girdled branch

Direct stick in the ground



With bases callused to minimize rot, terminals (single or branched) and stem pieces of considerable size can be direct-rooted in the ground.

Batch rooting or 1 cutting/pot



Bag rooting



Other variants for cuttings



Fiber pad



Water



Oasis block



Sand



Grafting



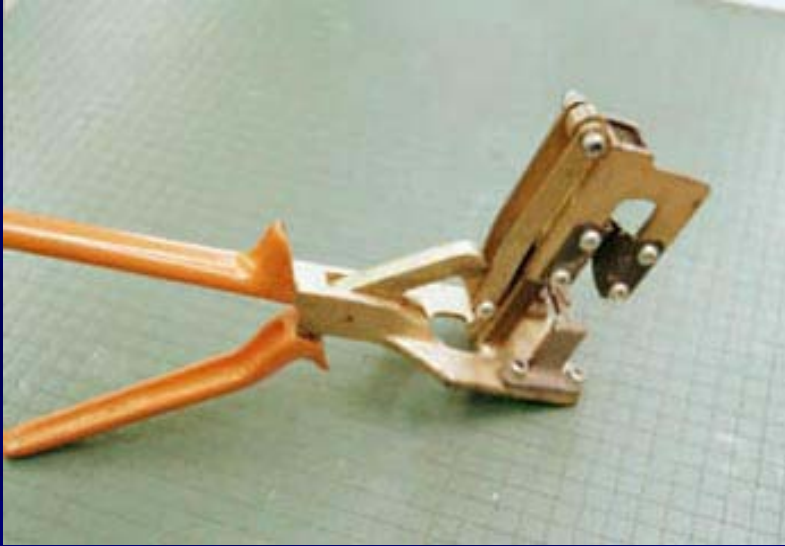
Inverted wedge

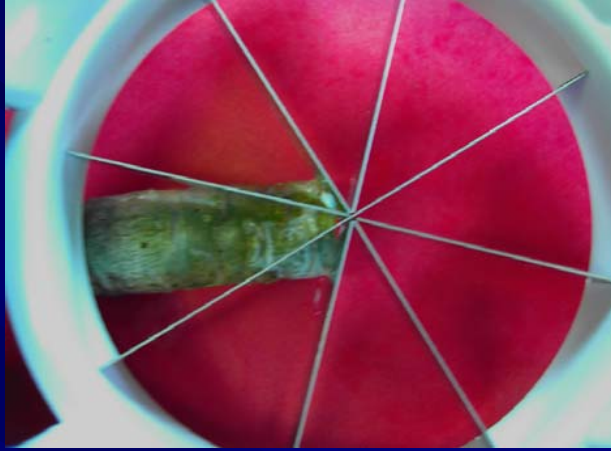
Side wedge



Wedge graft







Multiple splice grafts on plumeria

PVC pipe
splint to
support graft



Graft
unions

Topworking onto new shoots on old trees is practiced to convert a tree to mixed colors or to convert it to a new and more desirable cultivar.

This is a common practice in Bali & Thailand nurseries



Single bud top graft



Single bud



Wedge cut



Bud fitted



Bud tied down

Single bud graft at 8 weeks

This system has been widely used in Thailand where a 30 cm cutting of a valuable variety may yield a dozen or more plants.



Patch bud technique





Air-layering, while not practical on a large scale, is a useful technique for the collector.



Plumeria in tissue culture



Photos courtesy of W. Sean Miller
Comb. Proc. Intern. Plant Prop. Soc.
55:512-516 (published 2006)

These Dwarf Pink Singapore were all grown from tissue culture



In conclusion

- Plumeria is easy to propagate – excepting perhaps some of the species which root with difficulty and the seeds are short-lived
- Cutting propagation is most common
- Grafting practiced by some nurseries for rapid multiplication of new cultivars
- Air layers are a fairly sure means but less commonly used
- Seed yields a diverse population
- Tissue culture not widely used because of contamination

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