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NON-TRADITIONAL AGRICULTURAL EXPORT SUPPORT PROJECT
PRODUCTION GUIDE FOR KANGAROO PAWS

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Kangaroo paws are an unusual group of Australian wild flowers from the genera Anigozanthos and Macropidia. The plants are herbaceous perennials, with creeping, climbing rhizomes and basal, strap-shaped or sword-shaped leaves. The leaves are arranged in fans that resemble rhizomatous iris. Flowers with bright red, purple, green, or yellowish colors are borne in a single row along a tall, narrow, woolly spike or racine that stands above the foliage. As the flowers open, the spike is bent and resembles a kangaroo's paw, thus the name.

Species. Twelve species of kangaroo paws are recognized and divided into two sections of the genus Anigozanthos, together with the monotype Macropidia fuliginosa. The species that have commercial value and are grown in Australia for cut as well as potted specimens are described below.

Anigozanthos manglesii. The red and green inflorescences produce 12 to 14-inch, grey-green, broad, sword-shaped leaves with stiff hairs scattered on both leaf edges. The flowering stem emerges from the center of the leaf fans and grows up to 3 feet tall. The branched flower stalk is covered with scarlet-red, woolly hairs that continue onto the swollen, red base of the flowers. The remainder of the 3-inch flower perianth is green and covered with dense, greenish hairs.

Anigozanthos bicolor. The plant of this red and green inflorescence grows 12 to 18 inches tall, with narrow leaves. It produces flowers with a red and green corolla and becomes dormant in the summer.

Anigozanthos gabrelae. This plant has red and green inflorescence and has a dwarf habit, excellent for potted plants. Leaves rarely exceed 4 feet in length with flower stems 8 inches tall.

Anigozanthos rufus. This plant has red inflorescences and dull green leaves. Flowers with a deep red corolla are produced on 2 to 3 foot stems.

Anigozanthos pulcherrimus. This species is known as the golden kangaroo paw. Leaves are grey brown, and the compound inflorescence is 2 to 3 feet tall. Flower color ranges from rich yellow to full gold.

Anigozanthos viridis. This green kangaroo paw can tolerate swampy areas and grows well in areas where the soil remains wet. The branched inflorescence can reach a height of 2 feet tall. Flowers are nearly 3 inches long and have a yellow-green base and bright, emerald green corolla.

Anigozanthos flavidus: This specie of Kangaroo paw grows well in cool climates, has evergreen leaves, and tolerates year-round humidity and rainfall. The branched inflorescences are 5 to 6 feet tall. Flowers are over 1 inch long and range from green to predominantly deep red. A pink variant of this species is also found.

Anigozanthos humilis. This species bears yellow to orange-red flowers, and the branched spike is 6 to 18 inches tall. Leaves are short (6 inches long) and green, with stiff hairs. This species has not grown well under cultivation.

Macropidia fuliginosa. This species is also called the black kangaroo paw and grows in large clumps. The yellow green leaves have a yellow marking and a dark tip. The compound inflorescence grows up to 3 feet tall and is covered with black, branched hairs. Flower buds are also covered with black hairs, but open to show greenish petals.

Growth Habit

Kangaroo paws thrive under the hot and calcareous soil. During the hot summer months when rainfall is minimal or nonexistent in its natural habitat in Australia, plants remain dormant, resuming growth during late winter and early spring when night temperatures are lower and more rain becomes available. Kangaroo paws can tolerate frosty nights and hard freezes before flower buds are initiated, but they will not flower unless plants are subjected to cool nights during the winter and spring. For this reason they can be grown in the tropics where night temperatures are cool (45°-65°F).

When grown in Florida, flower buds are initiated during the period when nights are cool. The flower grows at the terminal of the new growth, and flowers bloom during late spring and summer months. Flowers grow and develop from a panicle type stem and therefore do not mature at the same time from the same stem. Not until recently have Kangaroo paws been exploited for use as a commercial flower, both as cut and/or potted flowering plants. Since the Kangaroo paw is a relatively new introduction to the United States, only a limited number of cultivars are

available from limited sources. Some tissue culture laboratories have been successful in propagating superior quality Kangaroo paws through selection, and these are the plants that should be used for cut flower purposes. They are virtually disease free and may even be virus free. Stage III plants from the tissue culture labs are usually grown in the greenhouse for 4 to 6 weeks in 1/2 inch trays to increase their size. These are the ones that should be planted in early fall when night temperatures begin to get cooler. These plants will grow to a large flower size by the time spring arrives.

Culture

Beds should be prepared and mounded to allow excess water to run off rapidly during the wet season. Beds should be 3 to 4 feet wide to accommodate 2 rows of plants (spaced 2 feet apart between rows and 18 inches within rows). Irrigation can be applied through perimeter, drip, spitter, or overhead systems, since flowers are hardy and are not sensitive to water. However, overhead irrigation is discouraged. Drip or spitter irrigation are by far the best methods, since they save water, and if liquid fertilization is run through the irrigation system, fertilizer waste will be held to a minimum. In addition, there will be savings on pesticide and fungicidal sprays, as they will not be rinsed off constantly by overhead irrigation.

Fertilizer should be banded one foot apart (3 rows in each bed). A complete 6-6-6 fertilizer, applied at a rate of 2 pounds per 100 linear feet should be adequate and should be applied at

planting. Another application at the same rate should be repeated in late spring prior to flowering.

Irrigation should be controlled in such a way that the soil is not allowed to remain constantly wet or moist. Kangaroo paws thrive when on the dry side, hence the soil should be allowed to dry between waterings. The Kangaroo paw has an extensive root system and does not possess rhizome-like roots. Most of the growth comes from the sides of the mother plant and new rhizomes, and flowers are borne both on the new and older shoots. Once they flower, however, the shoot bearing the flower stem will not bear flowers again and should be removed. The Kangaroo paw is a long-term crop, and once flowers are harvested, they should be kept clean, weeded, and taken care of during the summer months. Production will be at its peak during the second and third years, after which plants can be dug, thinned, divided, cleaned and replanted. Soil should be fumigated again before replanting.

Problems

Kangaroo paws, like other cultivated plants, have some physiological problems. Not much is presently known about the remedy for these problems since the Kangaroo paw is a relatively new crop and has not been extensively researched. There are severe cultivation problems in Australia, but the problems may not be as severe here in Costa Rica and Guatemala. The main problem is the blackening of leaves, especially leaf tips.

The problem starts as black spots on top of leaves and edges, and progressively gets worse. According to the Australian

literature, this is caused by a disease called "The Ink Spot." This has been disputed by USDA researchers who claim that this is caused by a calcium deficiency. Three years of trials in Florida have shown the occurrence of the ink spot symptoms, but they are not considered severe to the crop and may not even be due to calcium deficiency, since Florida soils contain an ample supply of limestone. Blackening due to the ink spot disease has been questioned since plants originated from tissue culture material, and no fungal organism has been found on "black spot" infested tissue. Whatever the cause, in Florida the blackening of tissue is not widespread, and should not be a limiting factor in producing this crop. The same holds true when growing Kangaroo Paws in the tropics.

The Kangaroo paw seems to be resistant to powdery mildew and botrytis in the field.

Insects

There are several insects that attack Kangaroo paws in Florida: lepidoptera larvae (caterpillars) and grasshoppers. Flowers and leaves, therefore, should be sprayed periodically with the appropriate pesticide to get rid of these insects.

Harvesting

Kangaroo paws cannot be once-over harvested, since flowers do not mature at the same time and also exhibit variations from one plant to the next. Since flowers are borne on a panicle-like inflorescence, similar to baby's breath, harvesting should be

done selectively. Only those stems that have one-third of their flowers open should be harvested, and they should be cut at the junction of the flower stem and the main stem. Harvesting should be repeated every 3 to 4 days, when more of the remaining flowers start to mature and open. Harvested flowers should be placed in clean water to prevent wilting of the flower buds.

Research needs to be done on the keeping quality and handling of Kangaroo paws and their response to preservatives. No research with flower preservatives has been done on Kangaroo paws. It is good practice, however, to place flower stems in clean water, allow flowers to absorb water for 6 to 8 hours in a cool place away from the sun, and then refrigerate at 40° to 42°F. Flowers should not be placed in the cooler directly from the field, since the tender, immature flower buds have a tendency to wilt. Flower stems should be bunched in six and sold per bunch or stem. Prices vary from season to season and geographical areas, and as a rule, they command a higher price than a bunch of lilies, statice, gyps, snaps, or glads.