A short reference comment to this article; first, although most bromeliads will survive surprisingly well in a garden location, with absolutely no further attention (with the exception of tropical members in cold climates & cold growing members in tropical climates). I feel that the majority of people who acquire bromeliads would like to see their plants prosper & grow, as a result of their direct input. The following article is an attempt to make some fundamental concepts more obvious.

Microclimates;

(A definition; Components of the local environment, which has a direct affect on the growth & health of your plant)

Concepts;

Plants collect the sun’s energy during the day and store it as small high energy molecules, which are later used by the plant at night to power the growth cycle.

Plants only grow at night i.e. using the high energy molecules created during the day, they turn the nutrients taken from the soil & atmosphere, into sugars & eventually structural building blocks for growth of the plant, at night (carbon fixation cycle).

Example; take a fast growing punnet of seedlings like Tomatoes & turn them on their side, in the morning, observe them in late afternoon and you will notice that little has changed, though look at them the next morning & you will find they have produced grown which has allowed the top of the seedlings to grow up vertical. This process of growth requires the use of complex molecules called ‘enzymes’, to facilitate the conversion of these high energy units + nutrients, into sugars and building blocks for growth.

The activity of these enzymes is often affected by temperature, i.e. Some of these enzymes have a set temperature ranges which is necessary for them to function, if the temperature is below or above the enzyme optimal range, then that process does not occur, the end result of this is no growth. Prolonged temperature stress will result in the plant loosing the capacity to repair damage due to cold or heat & break down of cell structure results.

To reduce the affects of cold;
The concept of morning sun location, being more beneficial than afternoon sun location?

Example; If you have a winter climate with night time temps., of 0oC average, with day temps up to 15oC on average, then a morning sun location will increase the air temp., from 0oC to at least 10oC as soon as the sun comes up, though an afternoon sun location this process may take up to several hours later?

When you consider the length of winter and multiply the cold period by the number of days, then multiply the number of extra hours of cold (resulting from an afternoon
location), you end up with several weeks of extra cold in a yearly calendar of growing cycle.

The morning sun on nearby wall of brick, stone, solid composite material, surrounding your plant will reduce some of the affects of cold when growing plants. Radiant heat from the wall will raise the air temperature a few degrees as well as often reduce wind chill factor.

Optimum temperature range for most bromeliads is; 13°C to 29°C (55°F to 85°F) particularly tropical plants.

Tropical bromeliads require minimum temperatures above 10°C for healthy growth. Temperate bromeliads prefer winter minimum temperatures to go down to 5°C for stable growth. A large number of bromeliads will tolerate down to 0°C and up to 48°C as long as protected from frost & get an occasional soaking watering (not advisable in boggy soil location).

**Root growth in a plant pot, can indicates a lot about growing conditions**;
Root growth in top section of pot only; can indicate a lack of aeration in the growing medium i.e. the mix is too fine or too damp for the roots of that particular variety to grow deeper into the pot. (Other factors may also create this result though, are less common).
Root growth in the bottom section of pot only; can indicate that the growing mix is too porous for your watering pattern, i.e. mix is too dry in upper level of pot for healthy root growth, or this is a moist loving plant and needs more frequent watering? (again other factors may also create this result though, are less common).
Root growth on one side of pot only; This can indicate that heat on the out side of pot is killing root growth or that in the time this plant has been in the pot the new growth coming from actively growing pups has not had time to fill the rest of the post? (again other factors may also create this result though, are less common).

Will hopefully add some other tips to this word document at a later date.

**Foliage necrosis (areas of dead leaf tissue; e.g. spotting on old leaves) in mid to late spring.**
Often this may be the result of a variety of bromeliad not being able to tolerate the prolonged cold of winter, i.e. during the winter when the temperatures drop below that varieties healthy growing temp., range, cells in the foliage damage or die, though as very little growth occurs during winter no obvious damage is noticeable. As spring gets underway the temperatures reach the growing optimal range for the plant & then the repair process begins often resulting in the damaged cells being
isolated & destroyed by the plant to prevent further damage spreading via fungi & bacteria. This is where the spotting or necrosis becomes obvious. Some times a nutrient deficiency may produce a similar effect though this would appear in other varieties near by as well & at other times of the year.

My current web site address & contact details are;


Or phone Allan on (02) 66 291559
email Allan ; ant_52@westnet.com.au