

Shade Tolerance trials of Ozbreed plants.

Interim results.

By Todd Layt

Introduction

Ozbreed Pty Ltd has bred many varieties of tough native grasses, and strappy leaf plants. We are often asked which ones are best in shade. Until this research we were basing our advice on experience, and examples of how the plants grew in shade on various projects. Although some of this information is still valuable, we thought it advisable to conduct a shade trial as well. Based on both the previous real world experience, and this investigation, Ozbreed would be more accurately able to advise clients on the best plants for shade pertaining to the plants from it's range, and the plants included in this investigation.

Materials and methods.

Ozbreed at it's Pitt Town agricultural research facility, planted replicated plots of 29 of it's plant varieties. These were grown in shade that can best be described as dry moderately heavy shade, and another which could be best described as light dry shade. (See figures 1 and 2)The sites were shaded by many large trees and a house. The plants were established, and grown for 10 months then evaluated. They will be evaluated again at 14 months of age or a later date.

The soil was a heavy compacted soil. The plants were planted as an understorey under semi dense trees in a very dry area. The moderate heavy shade could best be estimated as approximately 70%; a dry shade, with roots of trees taking water form the plants. In fact when planting the plants, we had trouble planting them through the roots.

Testing

Each plant was evaluated with a score of between 0 and 10. 0 being dead, and 10 being extremely healthy and vigorous. The plants were tested in autumn 2007, after 10 months of Growth.

Results

The average results are listed in Table 3.

These results are for light shade in column 1 and moderate to heavy shade in column 2.

Table 1 Below lists the plants that performed the best in the actual Dry shade trials.

Figure 1. Soon after planting. Light dry shade.



Figure 2. Soon after planting. Moderate to heavy dry shade. (Sunniest part of the Day)



Table 1. Based On actual test results (Any plants scoring an average of 7 or more were accepted as of good quality under these conditions)

Best plants for light shade as an understorey in very dry conditions.

Little Jess
Tanika
King Alfred
Katrinus Deluxe
Cassa Blue
Breeze
Savannah Blue
Nyalla
Liriope Just Right
Katrinus
Wingarra
Revelation
Tasred
Cassica
TropicBelle
Poa Eskdale
Kingsdale

Best plants for moderately heavy shade as an understorey in very dry conditions.

Liriope Just Right
Tasred
Emerald Arch
Tanika
Nyalla
Little Jess
Katrinus Deluxe
Katrinus
Silver Edge
Wingarra
King Alfred
TropicBelle

Table 2. Plant quality ratings out of 10. The table below shows the averages. 10 being best, 0 being dead. The higher the number the better.

Plant trade name	Full sun to Light shade Up to 30%	Moderately to Heavy Shade (Data and estimate) 51% to 75%
Baby Bliss	6.5	2.5
Cassa Blue	8	3.5
Little Rev	5	1
Wingarra	7	7.75
Silver Edge	6	8.5
Mondra	3	3
Savanna Blue	7	4.5
Black Lea	3	3
Little Jess	8.5	8.5
Nyalla	8	8.5
Tanika	8	8.5
Flamin	4	6.5
Emerald Arch	5	8.5
Revelation	7	5
Tasred	7	9
Breeze	9	7.75
Liriope Just Right	8	9
Katrinus Deluxe	8.5	8.75
Velvet Kangaroo Paws	5	0
Lomandra Cassica	8.5	4
Tropic Belle	7	7.5
Katrinus	8	8
Mingo	4	6
Poa Eskdale	7	5
Kingsdale	7	5.5
Purple Lea	5	2.5
Nafray	5	1.5
Cream Lea	0	0
King Alfred	8.5	7

These results are very interim; and are only the first evaluation after 10 months.

As we are constantly asked which are the best plants for shade (all types of shade), we have gathered evidence from field evaluations, and combined the information with the data collected here and have performed estimates of various shade scenarios. Conditions such as heavy shade with adequate water, and heavy dry shade, and heavy wet shade. For Example, we have in other trials planted Katie Belles in wet heavy shade, in which it has done well, when the Katrinus Deluxe did not. See Figure 2.

We have based the following conclusions and recommendations on a combination of the results from the test, and our real world observations, and at this time will only recommend plants for shade that are less risky. For results see Tables 2, 3, and 4.

Table 2.

Plant trade name	Trees or buildings	Trees	Trees or Buildings Moderate shade	Moderate Shade (Estimate)
	Light shade Approx 30% Adequate Water (Estimate only)	Light shade Approx 30% Dry understory (Data & estimate)	31% to 50% Adequate Water (Estimate Only)	31% to 50% Dry Understory (Estimate Only)
Baby Bliss	Yes	Yes	Yes	Yes
Cassa Blue	Yes	Yes	No	No
Little Rev	Yes	Worth a try	No	No
Wingarra	Yes	Yes	Yes	Yes
Silver Edge	Yes	yes	Yes	yes
Mondra	Yes	No	Yes	No
Savanna Blue	Yes	Yes	Yes	Yes
Black Lea	Yes	No	No	No
Little Jess	Yes	Yes	Yes	Yes
Nyalla	Yes	Yes	Yes	Yes
Tanika	Yes	Yes	Yes	Yes
Flamin	Yes	No	Yes	Worth a Try
Emerald Arch	Yes	Worth a try	Yes	Worth a Try
Revelation	Yes	Yes	Yes	Yes
Tasred	Yes	Yes	Yes	Yes
Breeze	Yes	Yes	Yes	Yes
Liriope Just Right	Yes	Yes	Yes	Yes
Katrinus Deluxe	Yes	Yes	Yes	Yes
Velvet Kangaroo				
Paws	Yes	?	No	No
Katie Belles	Yes	Yes	Yes	Yes
Tropic Belle	Yes	Yes	Yes	Yes
Amethyst (Liriope)	Yes	Yes	Yes	Yes
Isabella (Liriope)	Yes	Yes	Yes	Yes
Lomandra Katrinus	Yes	Yes	Yes	Yes
Mingo	Yes	No	Yes	No
Poa Eskdale	Yes	Yes	Yes	Yes
Kingsdale	Yes	Yes	Yes	Yes
Purple Lea	Yes	Worth a try	No	No
Nafray	Yes	Worth a try	No	No
Cream Lea	No	No	No	No
King Alfred	Yes	Yes	Yes	Yes

Table 3.

Plant trade name	Moderatly to Heavy Shade 51% to 75% Adequate Water (Estimate Only)	Moderatly to Heavy Shade 51% to 75% Dry Understorey (Data and Estimate)	Heavy Shade 76% to 90% Adequate Water (Estimate)	Heavy Shade 76% to 90% Dry Understorey (Estimate)	Heavy wet Shade 76% to 90% Very Wet (Estimate)
Baby Bliss	No	No	No	No	No
Cassa Blue	No	No	No	No	No
Little Rev	No	No	No	No	No
Wingarra	Yes	Yes	?	?	No
Silver Edge	Yes	Yes	Yes	?	?
Mondra	Yes	No	No	No	No
Savanna blue	Yes	No	No	No	No
Black lea	No	No	No	No	No
Little Jess	Yes	Yes	No	No	No
Nyalla	Yes	Yes	No	No	No
Tanika	Yes	Yes	No	No	No
Flamin	Yes	Yes	No	No	No
Emerald Arch	Yes	Yes	Yes	Yes	Worth a try
Revelation	Yes	?	No	No	No
Tasred	Yes	Yes	Yes	Yes	Worth A try
Breeze	Yes Trim after 2 years	Yes Trim after 2 years	No	No	No
Liriope Just Right	Yes	Yes	Yes	Yes	Yes
Katrinus Deluxe	Yes	Yes	?	?	No
Velvet Kangaroo					
Paws	No	No	No	No	No
Katie Belles	Yes	?	Yes	?	Yes
Tropic Belle	Yes	?	No	No	No
Amethyst (Liriope)	Yes	Yes	Yes	Yes	Yes
Isabella (Liriope)	Yes	Yes	Yes	Yes	Yes
Lomandra					
Katrinus	Yes	Yes	?	?	No
Mingo	Yes	No	No	No	No
Poa Eskdale	?	No	No	No	No
Kingsdale	?	No	No	No	No
Purple Lea	No	No	No	No	No
Nafray	No	No	No	No	No
Cream Lea	No	No	No	No	No
King Alfred	Yes	Yes	No	No	No

Conclusion

The actual data gathered in this experiment helped mainly with dry shade, from moderate, to moderately heavy. The results of which can be seen in Tables 1 and 2. However, by combining this data with real world observations a more reliable estimate can be made of plants shade tolerance for other scenarios, including heavy shade, and moderately heavy shade with adequate water. Tables 3 and 4 outline these best estimates.

