

PAN AFRICAN FARMS- REPORT ON FOLLOW-UP STUDY TO EVALUATE EFFICACY OF PSHB FUNGICIDAL

2-YEAR FOLLOW-UP STUDY

As part of the original experimental trials in July 2018, 10 **PLATANUS X ACERIFOLIUM** trees in Ashford Road, Parktown. An independent consultant was asked to conduct a follow-up study of these trees in July 2020 (2 years after treatment). Refer spreadsheets below. Table 1 deals with the Ashford Road trees. It indicates the number of entry holes each tree had at the time of treatment, and the present condition of these trees two years later. It is clear that all 10 trees recovered and no recurrence took place. We will elaborate more on this below.

Table 2 deals with trees in Keyes Road - a street running parallel with Ashford. In August 2019, nine **PLATANUS X ACERIFOLIUM** trees were selected. 4 were left untreated (control) and 5 were treated with PSHB Fungicidal. The four trees in the control are now dying and suffer severe die-back. Four of the five trees that were sprayed are stable and show little die-back damage. One tree could not be saved. This is a 80% success rate after 12 months.

Significantly, the average number of entry holes in the Ashford Road trees was 412. The average number of entry holes in all nine of the Keyes Road trees was 5894 – a 15-fold increase in just 12 months. This is a massive increase and is indicative of the relative escalation of this scourge. It is further clear that there is a positive correlation between the number of entry holes and the likelihood of tree die-back. As a general rule the following calculation is suggested to predict successful treatment:

Draw a square of 20 X20cm. Count number of entry holes. Measure circumference of tree at breast height. Then multiply circumference X height (300)/400 = no 20x20 blocks. Then multiply no blocks with no holes counted. Example. A tree circumference is 186cm X300 =55800/400 = 139 blocks. Multiply 139 X 165 = 6277 entries. If this total is less than 8000, there is a good chance for tree survival. If higher, chance of recovery becomes increasingly smaller as the number increases.

COMPARISON BETWEEN DEGREES OF INFESTATION AND SURVIVAL
USING PSHB FUNGICIDE ON **PLATANUS X ACERIFOLIUM**

Ashford Road Site

TABLE 1

Tree number	No of PSHB holes Sample area*6	CBH cm	Estimated No of beetles per 3-meter trunk	Present Status	% Crown
6	165	158.5	526	Alive	100
9	225	144	718	Alive	100
11	153	207	488	Alive	100
14	143	161	456	Alive	100
17	100	233	319	Alive	100
20	159	233	507	Alive	100
22	70	129	223	Alive	100
34	86	163	274	Alive	100
41	103	150	328	Alive	100
49	89	170	284	Alive	100

Keyes Road Site

TABLE 2

Tree number	No of PSHB holes 20 x 20 cm	CBH cm	Estimated No of beetles per 3-meter trunk	Present Status	% Crown
1 - Unsprayed	45	186	6277	Dying	50
2 - Unsprayed	52	178	6942	Dying	50
3 - Unsprayed	61	177	8097	Dying	50
4 - Unsprayed	35	202	5302	Dying	50
5 - Sprayed	44	176	5808	Stable	80+
6 - Sprayed	30	150	3375	Stable	80+
7 - Sprayed	26	144	2808	Stable	80+
8 - Sprayed	64	178	8544	Stable	80+
9 -Sprayed	72	194	10476	Dying	30

NOTES REFERRING TO TABLE

- 1 Ashford Road was first sprayed and maintained 2 years before Keys Road
- 2 The trees in Ashford Road (10) was selected with Randomized Tables from the 52 trees that were sprayed
- 3 The trees in Keyes Road (14) was selected by comparing 5 trees and randomly selected from the rest
- 4 Apart from counting holes physically, the rest of the criteria used were visual
- 5 Number 9 in Keyes Street was doomed from the onset and its morbidity could not be reversed
- 6 Sample area calculated as circumference X height/22/7

CONCLUSION.

It is re-iterated that all tests were conducted with "Proof of Concept" in mind, and replicated field trials will now be done taking cognizance of seasonal variables, tree variety, growth cycles and beetle activity variables. The present evaluation revealed the following:

- The penetrating ability of the ANODS is a key feature to any treatment, and in its present state offers the potential to combat the scourge of PSHB beetles.
- The products are easy to apply and offers an economically viable alternative to expensive and labour intensive injection systems, especially where treatments of large numbers of trees is required.
- The Fungicidal formula works well, especially due to its penetrating ability through the various layers of the tree trunk. Clear indications have been observed that it had a destructive effect on Fusarium.
- As the fungicidal formula contains no toxic substances, it offers the least possible harmful impact on the wider ecology.
- After a 2-year follow-up study, the PSHB Fungicidal spray showed a high tree recovery rate.