



of the 38 families, the Ford clones were used as
. Six Eastern clones were used as male parents.
clones used were: Av.49, Av.183, Tj-1, Tj-16, 1
Clones Av.49(13 crosses), PB-186(6 crosses), and
ses), appear in the most combinations. As in the
se Av.49 was the clone used most extensively as a

e seedlings attained a sufficient size they were
test. Only the trees with No. 1 ratings were rec
se appeared in but 8 of the 38 families, as shown

328 x PB-186 15 trees F-176 x Av.

edlings in this progeny. Seven
ght are smaller. South American
otic lesions with damage and de
ers are less heavily attacked a
with small lesions. Two trees

The resistance to South ...
1938
FL-FOL0830
CPAA-14067-1



desembro 1942
1939

THE RESISTANCE TO SOUTH AMERICAN LEAF DISEASE OF SEED-
LING FAMILIES FROM THE 1939 PROGRAM OF CROSS-POLLINATIONS ON
THE FORDLANDIA ESTATE OF THE FORD RUBBER PLANTATIONS COMPANY.

There are 38 seedling families represented in the crosses made during the 1939 flowering season. These crosses were made at Fordlandia and the seeds were then shipped to Belterra for planting.

The crosses are planted in plots C and D of block 91 at a field planting distance of 15 x 15 feet.

In all of the 38 families, the Ford clones were used as female parents. Six Eastern clones were used as male parents. The Eastern clones used were: Av.49, Av.183, Tj-1, Tj-16, PB-186, GL-1. Clones Av.49(13 crosses), PB-186(6 crosses), and Tj-16 (5 crosses), appear in the most combinations. As in the 1938 crosses, false Av.49 was the clone used most extensively as a male parent.

When the seedlings attained a sufficient size they were given the Cramer test. Only the trees with No. 1 ratings were recorded, and these appeared in but 8 of the 38 families, as shown below:

F-328 x PB-186	15 trees	F-176 x Av.49	1 tree
F-170 x PB-186	8 "	F-570 x PB-186	1 "
F-351 x PB-186	2 "	F-166 x PB-186	1 "
F-315 x Tj-16	2 "	F-1276 x Tj-16	1 "

Descriptions of the various seedling families are presented on the following pages of this report.

F-1625 x Av.49

There are 15 seedlings in this progeny. Seven trees have a good growth while eight are smaller. South American Leaf Disease causes some necrotic lesions with damage and deformation on some trees, while others are less heavily attacked and show only minor spotting with small lesions. Two trees show evidence of moderate sporulation. Defoliation is very moderate.

Some light spotting by *Catacauma Huberi* occurs.

Langford scale 3-4

F-328 x PB-186

This large family contains 189 seedlings. In general growth is vigorous, although a few trees have only a fair rate of growth.

-2-

Many seedlings are very clean and show little damage by SALD. At most, the disease causes necrotic lesions with some damage and deformation. In a few instances light sporulation was noted. Defoliation by SALD is very moderate except in a few smaller seedlings which showed rather severe defoliation and 3 of which showed some die-back.

There is heavy spotting by *Catacauma Huberi* with damage resulting in reddening of the leaves and some defoliation.

Langford scale 4-5

F-1403 x Av.49

In this family are seven seedlings of moderately vigorous growth. Six of these show only minor spotting and slight deformation caused by SALD. One seedling has necrotic lesions with extensive damage and deformation. There is no evidence of any sporulation. Defoliation is very moderate.

Spotting of the leaves by *Catacauma Huberi* is very heavy.

Langford scale 4-5

F-4542 x A-183

This family consists of 34 seedlings. There is some variation in growth but most of the trees have a vigorous growth rate. SALD causes necrotic lesions with damage and often severe deformation of the leaves. There is no sign of sporulation and practically no defoliation. Many flushes of leaves are untouched by disease.

No spotting by *Catacauma* was found.

Langford scale 4-5

F-1168 x GL-1

There are 58 trees representing this cross. Of these, 52 have a good vigorous growth. Of the smaller seedlings one has suffered die-back. SALD causes necrotic lesions with some damage and deformation. One tree shows evidence of medium sporulation. Defoliation is very moderate.

Heavy spotting by *Catacauma Huberi* occurs, but no serious damage results.

Langford scale 4-5

F-406 x Av.49

Fifteen seedlings comprise this family. Growth is from moderately vigorous to vigorous. SALD causes necrotic lesions with damage and deformation. One seedling shows light sporulation.

-3-

Defoliation is moderate. One seedling has suffered die-back.

There is no spotting by *Catacauma Huberi*.

Langford scale 4-5

F-328 x Av.49

This family is made up of 21 seedlings of moderately vigorous growth. A few of the smaller seedlings suffer severe defoliation. Some trees are free from SALD, and at most the seedlings have spotting with some necrosis and minor deformation. There is no evidence of any sporulation. General defoliation is rather moderate.

Some seedlings are heavily spotted by *Catacauma*.

Langford scale 4-5

F-570 x PB-186

This family is composed of 21 seedlings of moderately vigorous growth. SALD is very light, usually causing only reddish spotting of the leaves with some necrotic lesions and minor deformation. Two seedlings show heavy deformation of the leaves. There is no evidence of sporulation. Defoliation is minor.

Light spotting by *Catacauma Huberi* occurs.

Langford scale 4-5

F-315 x Av.49

There are 17 seedlings in this family. Most of the trees have a vigorous growth. Two seedlings have died-back. SALD causes spotting of the leaves with necrotic lesions and deformation. There is no sign of any sporulation.

Minor spotting by *Catacauma* was noted.

Langford scale 4-5

F-170 x PB-186

There are 147 seedlings in this family. Growth ranges from moderately vigorous to vigorous. Fourteen seedlings have died-back at one time but are now making a very satisfactory growth. SALD is mostly light in its attacks; causing spotting of the leaves with necrotic lesions and deformation. In a few instances light sporulation was found. Defoliation is minor. There are many seedlings free from disease and the family as a whole has a good appearance.

There is moderately heavy spotting by *Catacauma* but no serious damage results.

Langford scale 4-5

-4-

F-316 x Av.49

This family contains 77 seedlings of fairly vigorous growth. SALD is light on many of the trees, but on others is somewhat heavier, causing spotting of the leaves with distinct damage and deformation. Light to medium sporulation was noted in several instances. Defoliation is minor.

Catacauma Huberi causes spotting of the leaves but the damage is not serious.

Langford scale 4-5

F-176 x Av.49

There are 68 seedlings in this family. Growth is moderately vigorous. SALD causes spotting with necrotic lesions, deformation and damage. A number of trees exhibit medium sporulation. A few trees are nearly free from disease while a few smaller seedlings show severe defoliation. General defoliation is minor.

Most of the seedlings show some spotting by Catacauma but this causes little damage.

Langford scale 5-6

F-416 x Av.49

There are 11 seedlings in this family. Growth is quite good except in two cases. Six of the seedlings have a clean appearance and are only lightly attacked by SALD. Other seedlings show spotting with necrotic lesions, damage and deformation. Defoliation is moderate. There is moderate sporulation on several seedlings.

Catacauma Huberi causes light spotting of the leaves.

Langford scale 5-6

F-1639 x PB-186

This family is composed of 19 seedlings. Growth is variable but most of the seedlings are rather small. SALD causes some necrosis with damage and deformation. No evidence of sporulation was noted. General defoliation is moderate; two seedlings have been completely defoliated.

Catacauma is severe on several of the seedlings, causing reddening of the leaves and defoliation.

Langford scale 5-6

F-707 x PB-186

This family contains 28 seedlings. These trees have mostly a

-5-

moderate type growth. A few trees suffer only light attacks by SALD, others have necrotic lesions with damage and deformation. One tree shows signs of light sporulation. Some seedlings are heavily defoliated and two have died-back.

There is no evidence of Catacauma Huberi.

Langford scale 5-6

F-1276 x Tj-16

There are 68 seedlings of this cross. The seedlings of this family have a moderate rate of growth. SALD causes extensive spotting with necrotic lesions, much damage, and deformation. There is heavy sporulation. Only minor defoliation.

Some seedlings are heavily spotted by Catacauma Huberi.

Langford scale 5-6

F-230 x Tj-1

There are 9 members of this family. Seven trees have a very vigorous growth. SALD causes spotting with necrotic damage and deformation. Sporulation ranges from light to heavy. Defoliation is minor.

No spotting of the leaves by Catacauma was noted.

Langford scale 5-6

F-166 x Av.49

There are only four seedlings in this family. The trees have a moderate rate of growth. SALD causes extensive spotting with necrotic damage and deformation. Two seedlings exhibit heavy sporulation. Defoliation is very moderate.

Two of the seedlings are heavily spotted by Catacauma but no serious damage results.

Langford scale 5-6

F-1693 x PB-186

This seedling progeny consists of 14 trees. Growth is mostly vigorous although several trees are rather small. SALD causes spotting of the leaves with necrotic lesions causing distinct damage and deformation. No signs of any sporulation. One seedling has suffered die-back and two are heavily defoliated. General defoliation is moderate.

One seedling bears some spots of Catacauma.

Langford scale 6

F-566 x Av.49

There are 119 seedlings representing this seedling family. Growth ranges from poor to fair. While quite a few trees in this series are nearly free from disease, others show spotting of the leaves with necrotic damage and deformation. Nine seedlings exhibited light to moderate sporulation. Twenty seedlings have suffered die-back of the growing tip. Defoliation is mostly moderate.

Catacauma causes heavy spotting with damage and defoliation.

Langford scale 6-7

F-1395 x Av.49

This family is represented by 15 seedlings. Growth is only fair. SALD causes necrotic lesions with distinct damage and deformation. Sporulation ranges from moderate to heavy. Defoliation is moderate.

Light spotting by Catacauma causes no damage.

Langford scale 6-7

F-1395 x Av.183

There are only five trees in this family. Four of the trees have poor growth, while one is vigorous. SALD causes necrotic lesions with distinct damage and deformation. Sporulation is rather heavy. Defoliation is moderate.

Minor spotting by Catacauma Huberi.

Langford scale 6-7

F-208 x Tj-16

This family contains 21 seedlings. Their growth ranges from fair to moderately vigorous. A few trees are nearly free from SALD but most of them have heavy spotting of the leaves with necrotic lesions causing damage and deformation. There is light to medium sporulation. General defoliation is moderately severe.

Heavy spotting by Catacauma occurs but there is no serious damage.

Langford scale 6-7

F-707 x Av.49

This family contains 131 seedlings. In general growth is moderately vigorous. Eleven seedlings have suffered severe defoliation and some die-back. There is generally moderate defoliation. A number of seedlings are nearly free from SALD

-7-

but usually the seedlings have spotting with necrotic lesions causing distinct damage and deformation. There is light to moderate sporulation.

Spotting of the leaves by *Catacauma Huberi* is light and no damage results.

Langford scale 6-7

F-173 x Av.49

There are 12 seedlings in this family. Growth is from small to moderate. SALD has caused extensive necrotic damage to some seedlings. There is no sign of any sporulation. Defoliation is fairly severe.

Catacauma Huberi causes heavy spotting of some seedlings.

Langford scale 6-7

F-166 x PB-186

This family contains 14 seedlings. These trees have a small to moderate rate of growth; SALD causes extensive spotting with necrotic lesions and deformation. There is light to heavy sporulation on a few trees. Defoliation is moderate.

There is heavy spotting of the leaves by *Catacauma* and some defoliation results.

Langford scale 6-7

F-351 x PB-186

This family contains 193 seedlings. Many trees have a vigorous growth but there are a large number of seedlings which are smaller and suffer defoliation and die-back. In many cases the trees are disease-free or only lightly attacked, but in others SALD causes heavy necrotic damage with raggedness and deformation. Sporulation runs from light to heavy.

Catacauma causes light spotting of the leaves.

Langford scale 6-7

F-315 x Tj-16

The 36 seedlings of this family exhibit a fair to moderate growth. A number of trees are practically free from any sign of disease. Others have spotting with necrotic lesions, some damage and deformation. A few small seedlings have suffered severe defoliation and die-back. General defoliation is moderate. No sporulation

-8-

was noted.

Minor spotting on a few trees is caused by *Catacauma Huberi*.

Langford scale 7-8

F-269 x Tj-16

This family is composed of 19 seedlings. Growth is very poor. SALD causes spotting of the leaves with necrotic lesions, damage and deformation. Sporulation is heavy and there is heavy defoliation.

Light spotting by *Catacauma* occurs.

Langford scale 7-8

F-171 x Av.49

There are 48 seedlings of this combination. Growth ranges from small to moderate, with most trees being on the smaller end of the scale. SALD is light on some seedlings but on most it causes necrotic damage with deformation. Several trees exhibit light to medium sporulation. Defoliation is moderate but a number of trees show heavy to complete defoliation and some die-back.

Spotting by *Catacauma Huberi* is light.

Langford scale 7-8

F-1168 x PB-186

There are 54 seedlings of this cross. Growth is from fair to moderate. General defoliation is moderate but a number of seedlings are severely defoliated. SALD causes spotting with extensive necrotic lesions and damage and deformation. Many seedlings show rather heavy sporulation.

There is heavy spotting of the leaves by *Catacauma*. Some damage results but there is no defoliation.

Langford scale 7-8

F-681 x Av.49

This large family consists of 188 seedlings. Growth is mostly poor to moderate. Most of the seedlings show severe to complete defoliation and some have died-back. SALD causes spotting with necrotic lesions, damage and deformation. A few trees show varying degrees of sporulation.

There is considerable spotting by *Catacauma Huberi* and there are a few instances where it causes reddening of the leaves and defoliation.

Langford scale 7-8



-9-

F-566 x Tj-16

There are only 13 trees of this cross. Growth ranges from poor to fair and six seedlings have died-back. SALD causes extensive necrotic damage and deformation with heavy sporulation. Defoliation is moderate.

Heavy spotting of the leaves by Catacauma does not cause serious damage.

Langford scale 8-9

F-1624 x Av.183

There are only two trees of this family. Both are tall seedlings; one shows no evidence of SALD or Catacauma while the second tree has small necrotic lesions with minor deformation. No sign of sporulation. Minor defoliation.

?

F-1655 x Av.49

A single seedling of fairly vigorous growth represents this family. SALD causes spotting of the leaves with necrotic damage and minor deformation. Moderate sporulation. Light defoliation. No sign of Catacauma Huberi.

?

F-170 x Av.49

There are only two seedlings of this cross. Growth is poor. SALD causes some necrotic damage with deformation. No sign of sporulation and only minor defoliation. No spotting by Catacauma Huberi.

?

F-230 x Tj-16

Of the three seedlings in this family, two are fairly small while the remaining one is vigorous. The large seedling is nearly free from disease. SALD causes only slight spotting with minor lesions and deformation. Of the two smaller trees, one has died-back. SALD has caused spotting with some necrotic damage and deformation. Both of the seedlings show light to medium sporulation.

?

F-370 x PB-186

This family has but a single seedling. SALD has caused spotting of the leaves with large necrotic lesions and damage. There is moderate defoliation. No sporulation. No sign of any Catacauma Huberi.

?