COMPARISON OF TASS-ROTSIM VERSIONS 2.05.03 AND 2.05.09

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SEPT. 30, 1992.

Changes to the last-but-one version of TASS-ROTSIM (version 2.05.03) were designed to decrease memory requirements and increase execution speed (version 2.05.09). Changes entailed the use of a sparse matrix to decrease the number of trees held in an array for determining which were within infection distance of stumps or other trees.

The following tests were made to check the results of runs with the new version compared to the previous one which is the standard for TASS-ROTSIM.

Simulations to stand age 90 were carried out with the following inputs:

Site index 30m; inoculum levels 2 or 4 (see W.J. Bloomberg. “Incorporation of Phellinus root rot impacts in the Tree and Stand Simulator (TASS)”. Minor services contract No. 49782. March 1991): initial stand densities 1000 or 2000 trees/ha.

RESULTS

Results are shown as maps of root rot distribution, stand tables and graphs for the two versions. The following conclusions are drawn from these:

1. At inoculum level 2 and 1000 trees/ha, both versions produced almost identical results.

2. At inoculum level 4 and 1000 trees/ha. version 2.05.09 underestimated root rot impacts. i.e.. the root rot area was smaller and the stand table values were higher than those of version 2.05.03.

3. At 2000 trees/ha, at both inoculum levels. version 2.05.09 overestimated root rot impacts. i.e.. root rot area was larger and stand table values were smaller.

4. Differences between versions began at approximately stand age 60.

The results indicate that insufficient trees are being included within the infection distance matrix at the lower stand density, whereas too many are included at the higher density. These effects are not evident until approximately stand age 60 at which time sufficient root contacts have developed for multiple infections to occur.

COMPARISON OF TASS-ROTSIM VERSIONS 2.05.03 AND 2.05.09
INOCULUM LEVEL 2. 1000 SPH

AGE	NO. TREES V20503	NO. TREES V20509	TOTAL VOLUME V20503	TOTAL VOLUME V20509	BA V20503	BA V20509
10	936	936	0	0	0.1	0.1
20	861	861	39	39	10.2	10.2
30	841	841	173	173	26.5	26.5
40	839	839	327	327	40.8	40.8
50	833	834	469	470	52.0	52.1
60	822	819	604	598	61.5	61.0
70	789	792	708	716	67.6	68.3
80	736	739	792	796	71.6	71.9
90	677	669	837	832	72.4	71.9

COMPARISON OF TASS-ROTSIM VERSIONS 2.05.03 AND 2.05.09
INOCULUM LEVEL 2. 2000 SPH

AGE	NO. TREES V20503	NO. TREES V20509	TOTAL VOLUME V20503	TOTAL VOLUME V20509	BA V20503	BA V20509
10	1945	1945	1	1	0.2	0.2
20	1795	1795	63	63	16.1	16.1
30	1759	1759	229	229	34.8	34.8
40	1722	1722	380	380	48.3	48.3
50	1641	1642	517	517	58.6	58.6
60	1367	1369	622	626	64.1	64.3
70	1162	1144	714	706	68.0	67.1
80	1023	989	794	764	71.1	68.5
90	888	823	866	790	73.4	67.1

COMPARISON OF TASS-ROTSIM VERSIONS 2.05.03 AND 2.05.09
INOCULUM LEVEL4. 1000 SPH

AGE	NO. TREES V20503	NO. TREES V20509	TOTAL VOLUME V20503	TOTAL VOLUME V20509	BA V20503	BA V20509
10	900	900	0	0	0.2	0.1
20	817	817	37	37	16.1	9.7
30	794	794	163	163	34.8	25.2
40	792	792	311	311	48.3	38.9
50	778	778	446	446	58.6	49.5
60	742	748	557	562	64.1	57.2
70	655	689	598	643	68.0	61.2
80	562	603	628	674	71.1	60.7
90	441	489	582	632	73.4	54.5

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INOCULUM LEVEL4. 2000 SPH

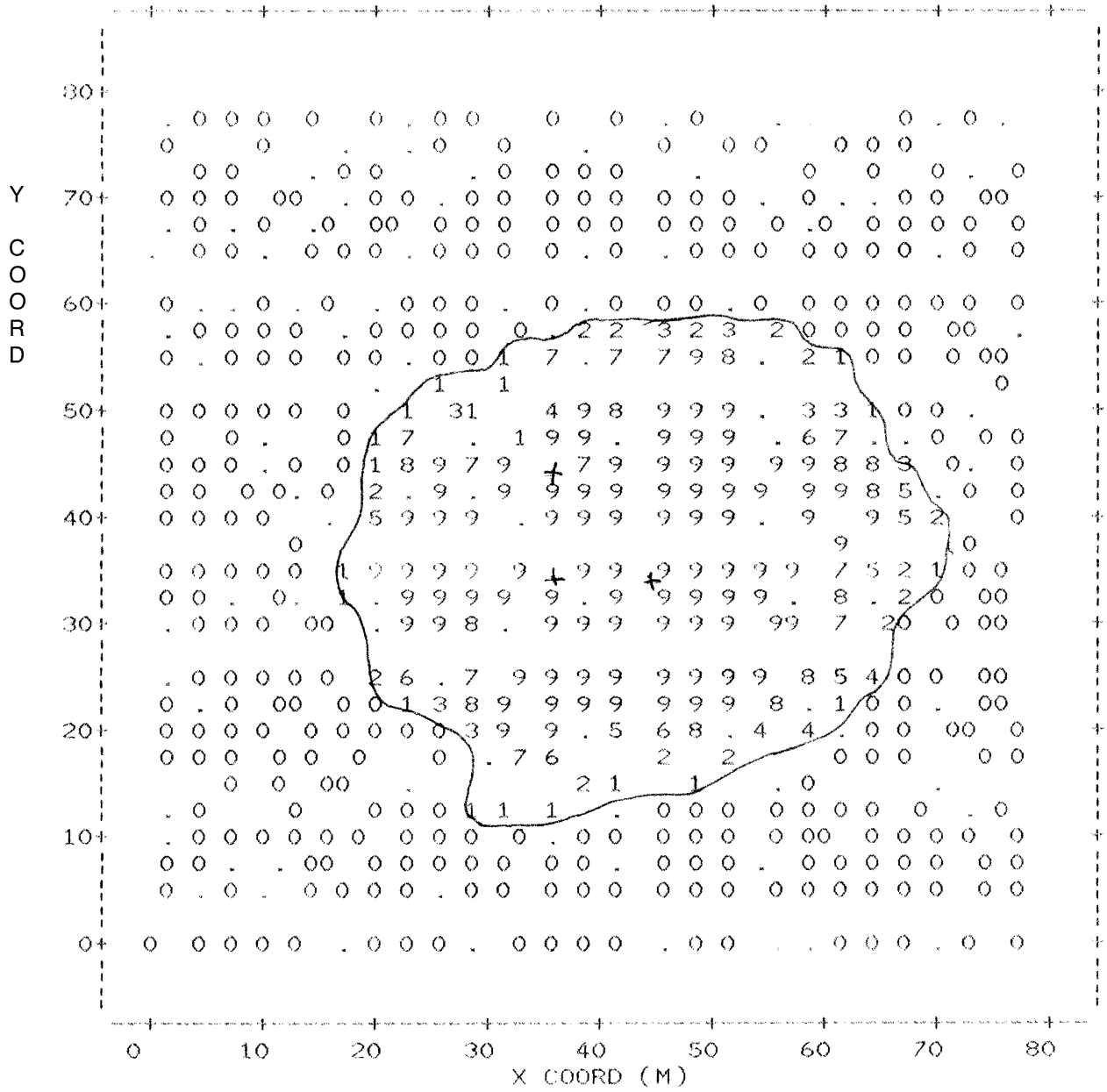
AGE	NO. TREES V20503	NO. TREES V20509	TOTAL VOLUME V20503	TOTAL VOLUME V20509	BA V20503	BA V20509
10	1869	1869	1	1	0.2	0.2
20	1705	1705	60	60	15.2	15.2
30	1664	1664	217	217	33.1	33.1
40	1619	1617	367	367	46.5	46.4
50	1522	1519	496	494	56.2	56.0
60	1275	1269	588	585	60.7	60.3
70	1014	981	633	603	60.4	57.5
80	825	772	662	602	59.2	54.0
90	688	591	678	557	57.6	47.6

PHELLINUS INOCULUM LEVEL 2, 1000 SPH, BSI 30

Stand Age 90, TASS Version 2.05.03

0 = Healthy, 9 = Killed by Phellinus

1 – 8 = Level of Root Rot, '.' = Killed by TASS



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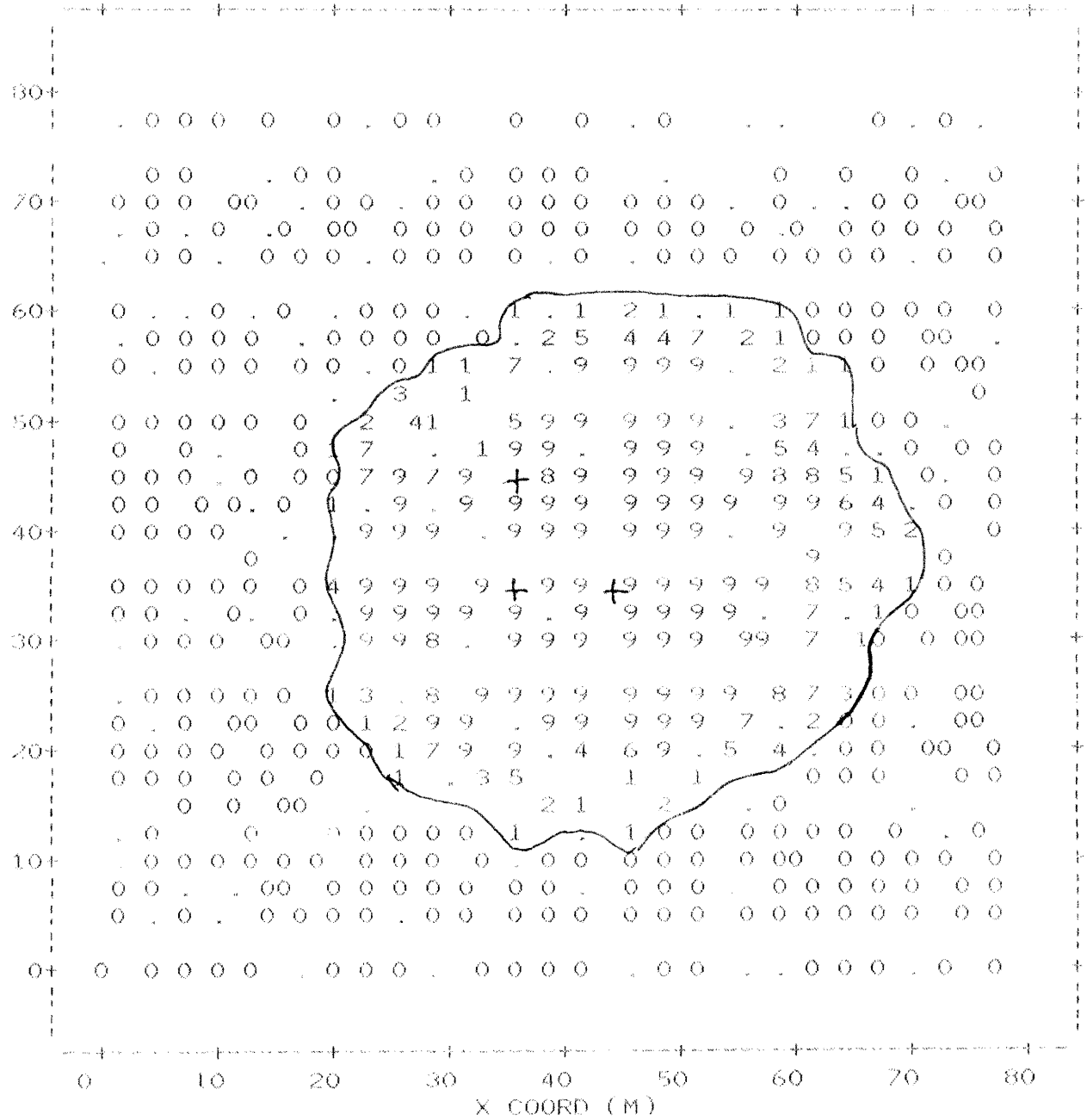
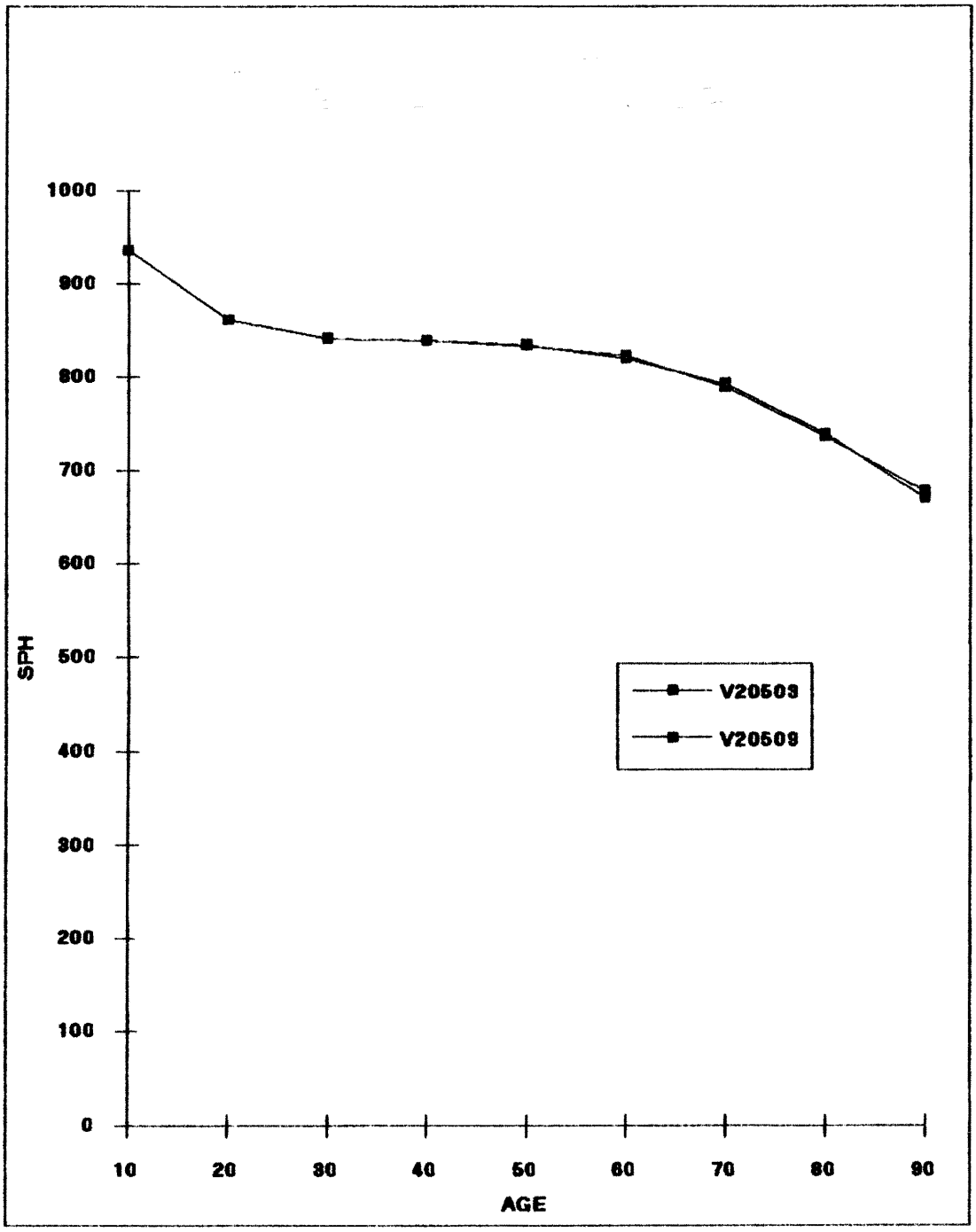


COMPARISON OF ROTSIM-TASS VERSIONS

Inoculum Level 2, 1000 sph



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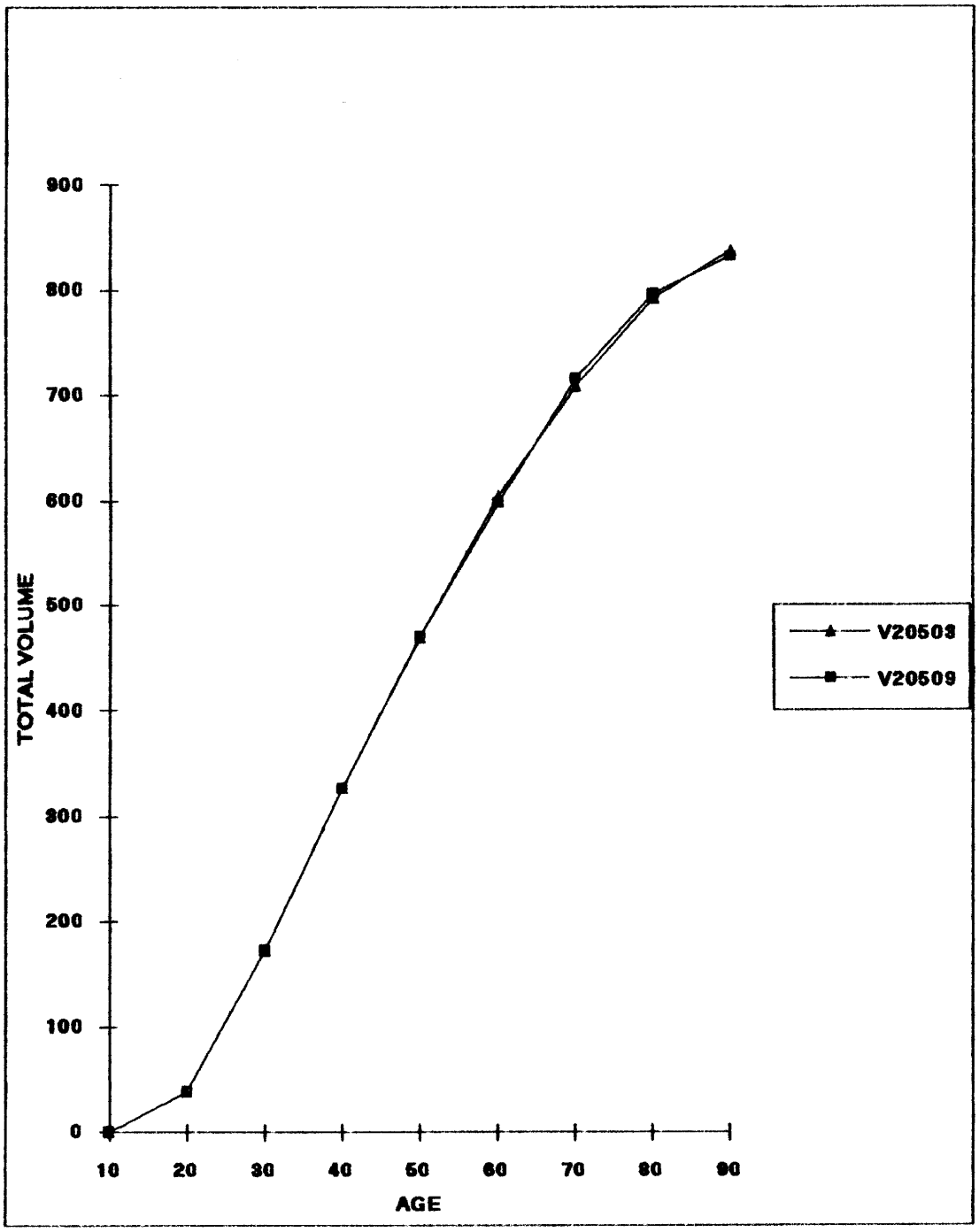
Inoculum Level 2, 1000 sph



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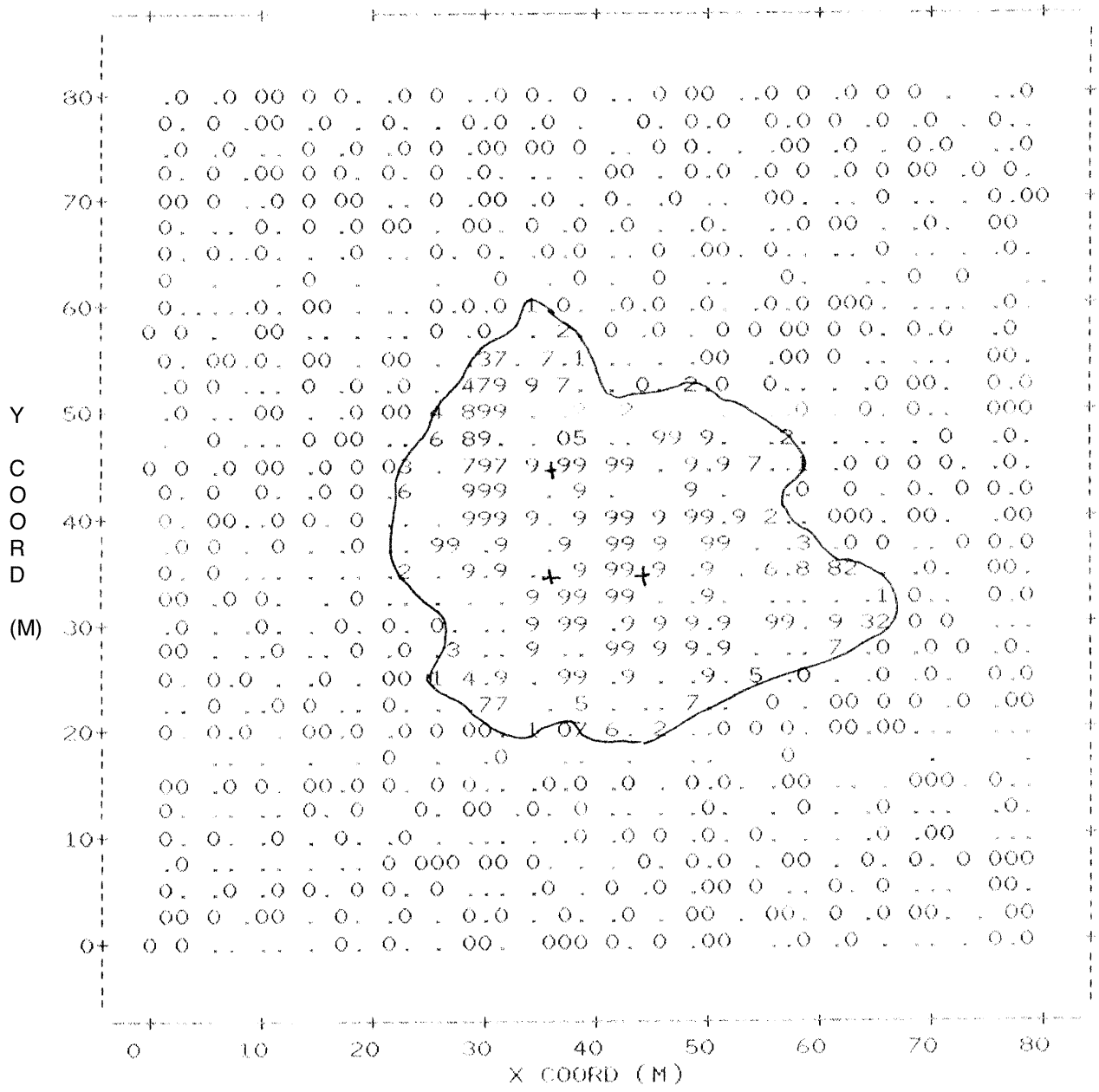

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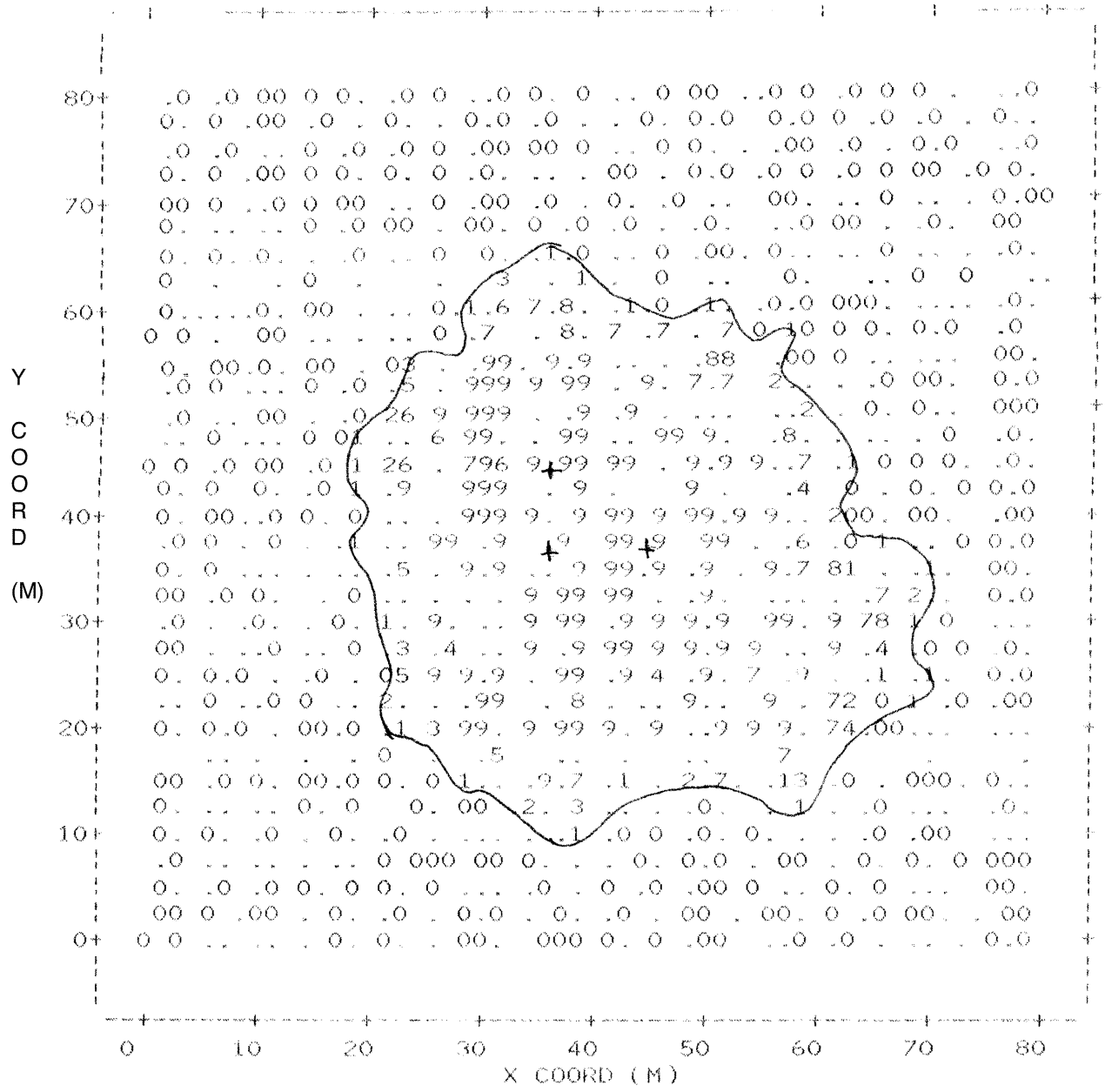
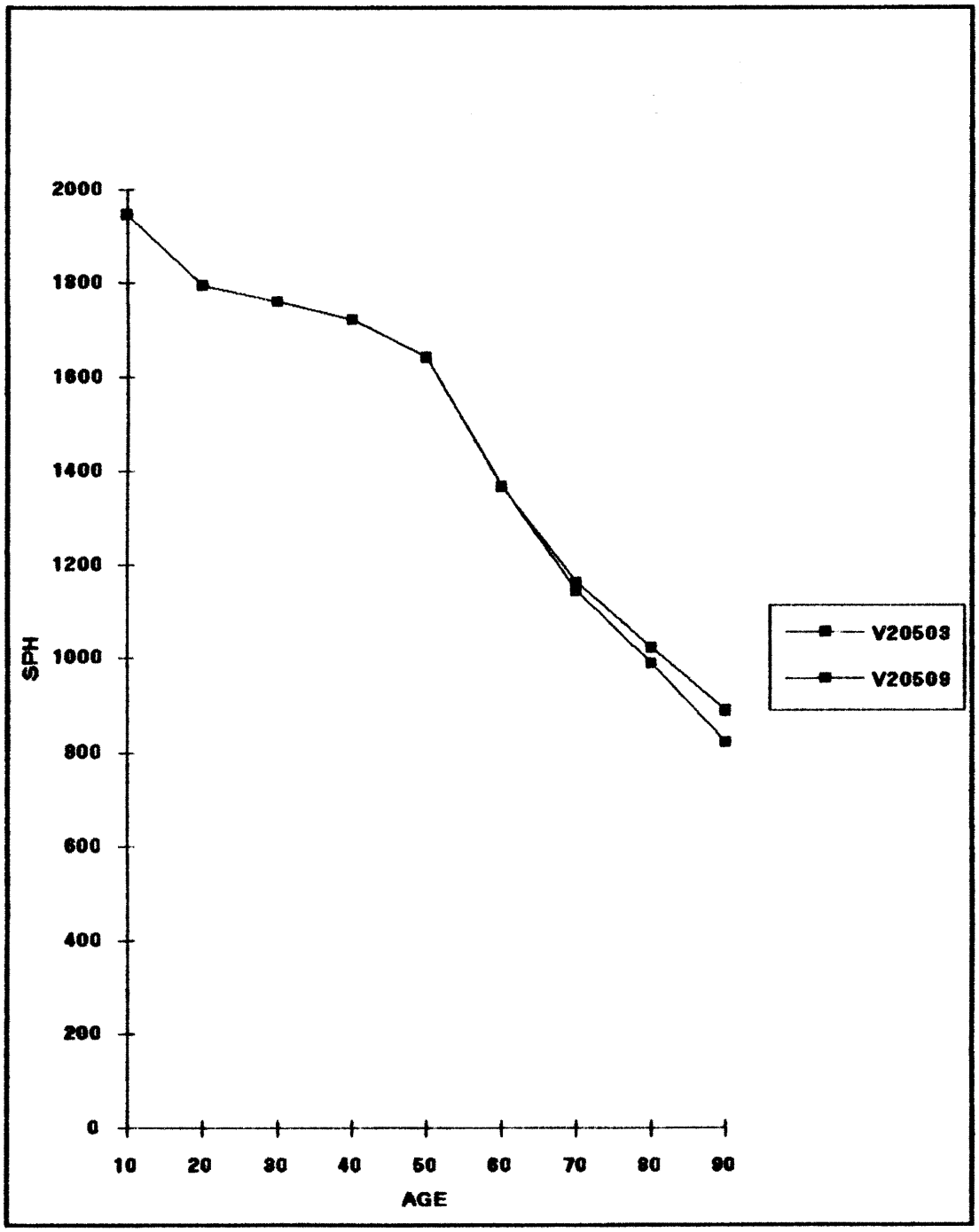


COMPARISON OF ROTSIM-TASS VERSIONS

Inoculum Level 2, 2000 sph



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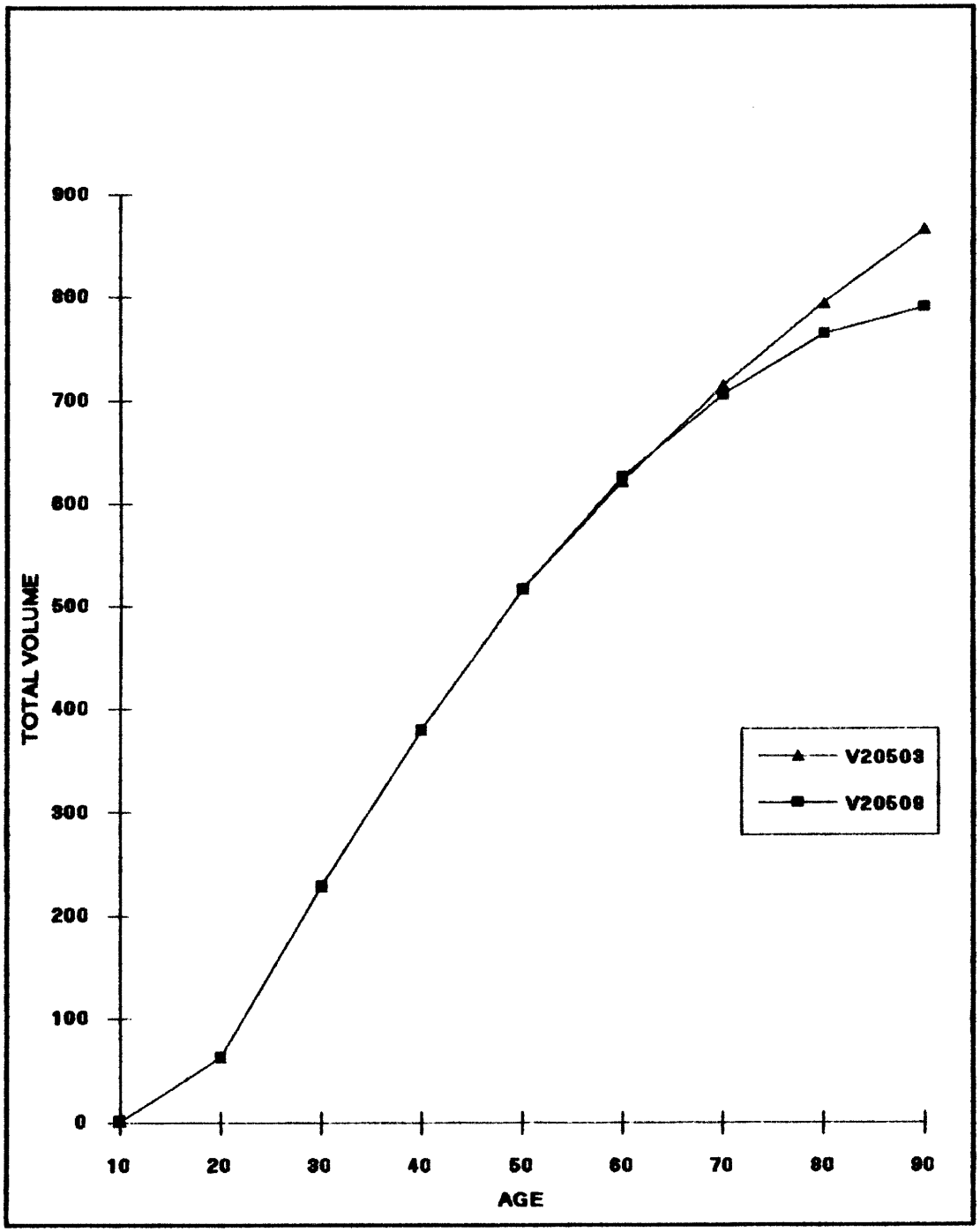

PHELLINUS INOCULUM LEVEL 4, 1000 SPH, BSI 30

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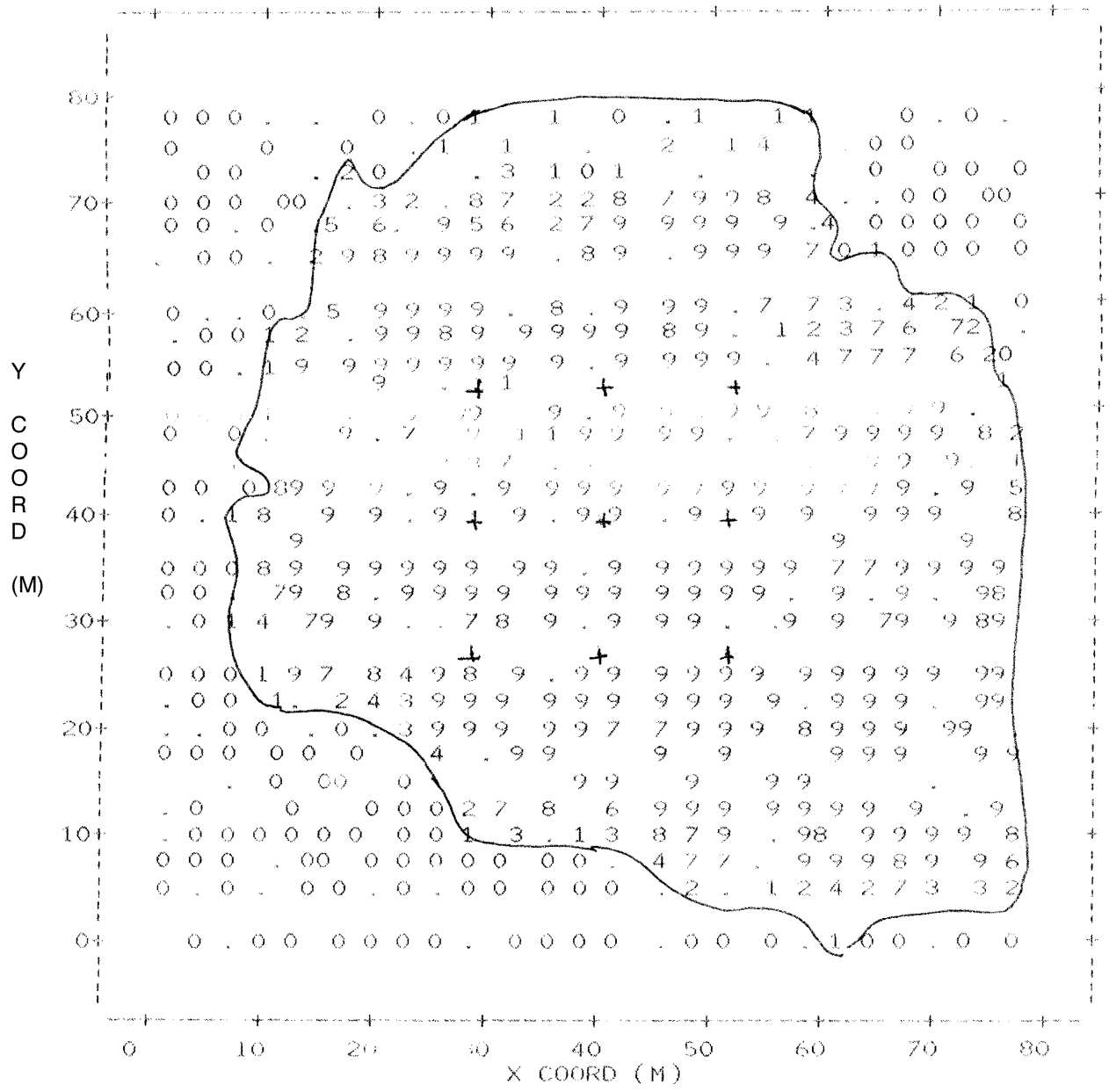

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Stand Age 90, TASS Version 2.05.09

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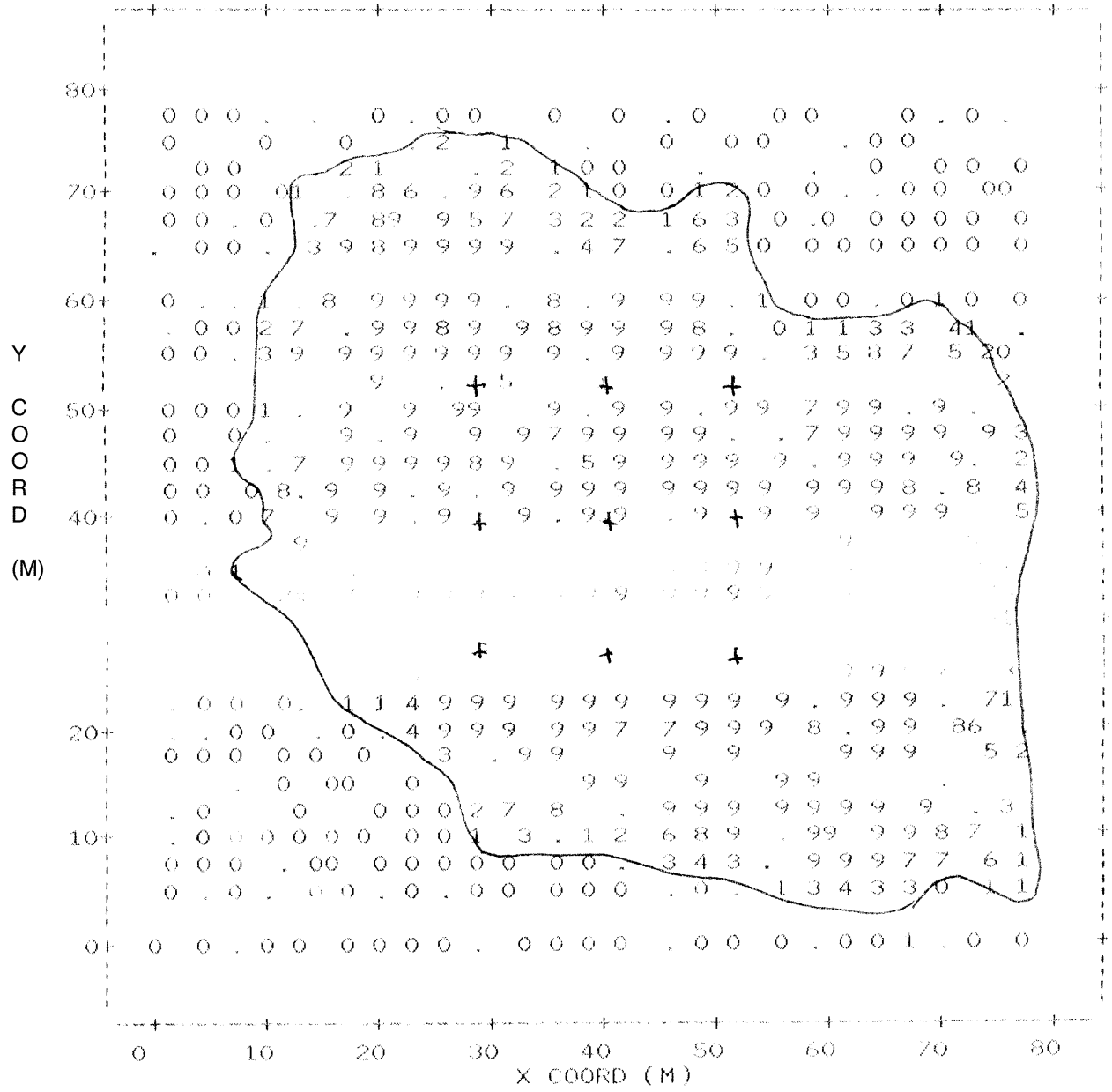
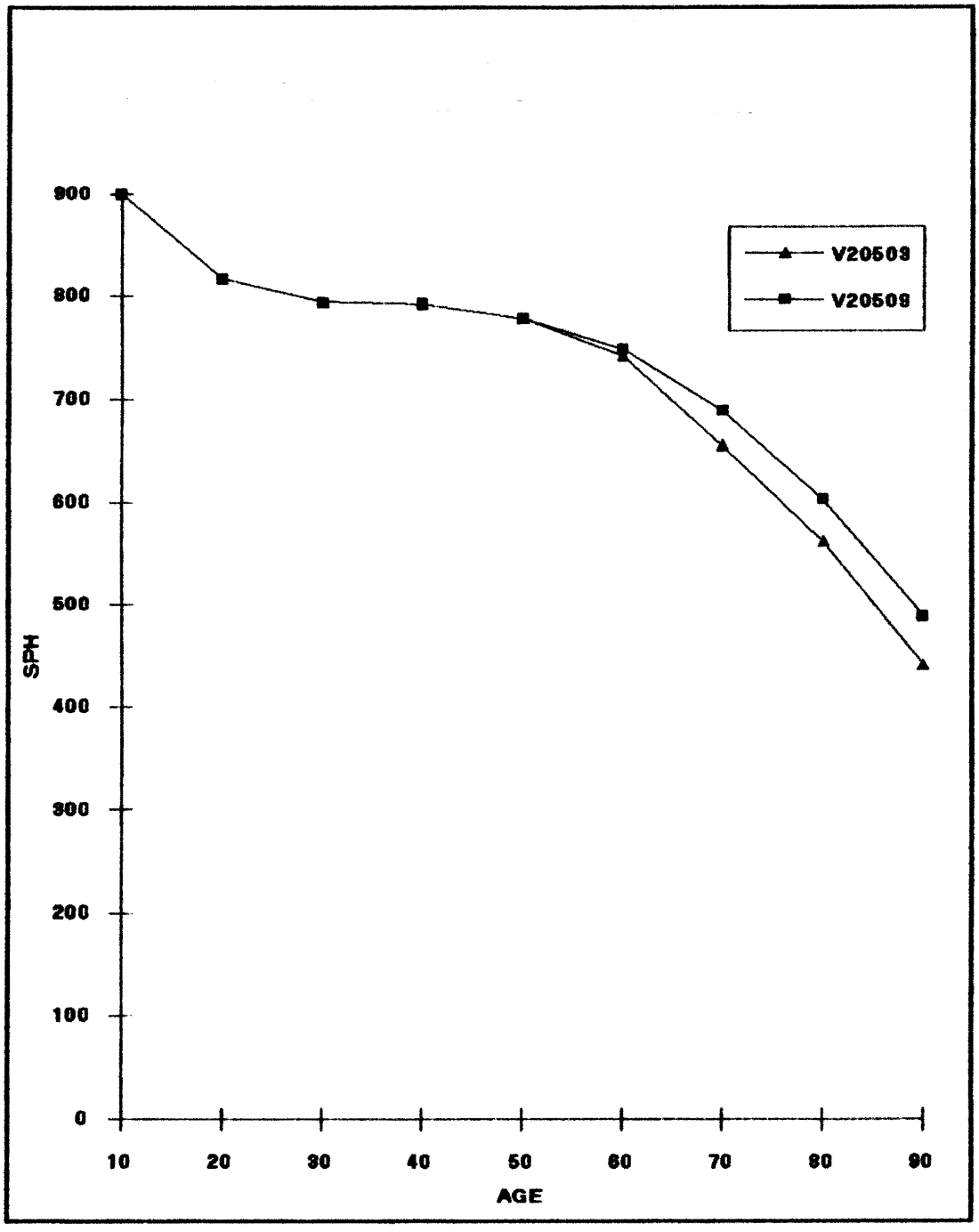


COMPARISON OF ROTSIM-TASS VERSIONS

Inoculum Level 4, 1000 sph



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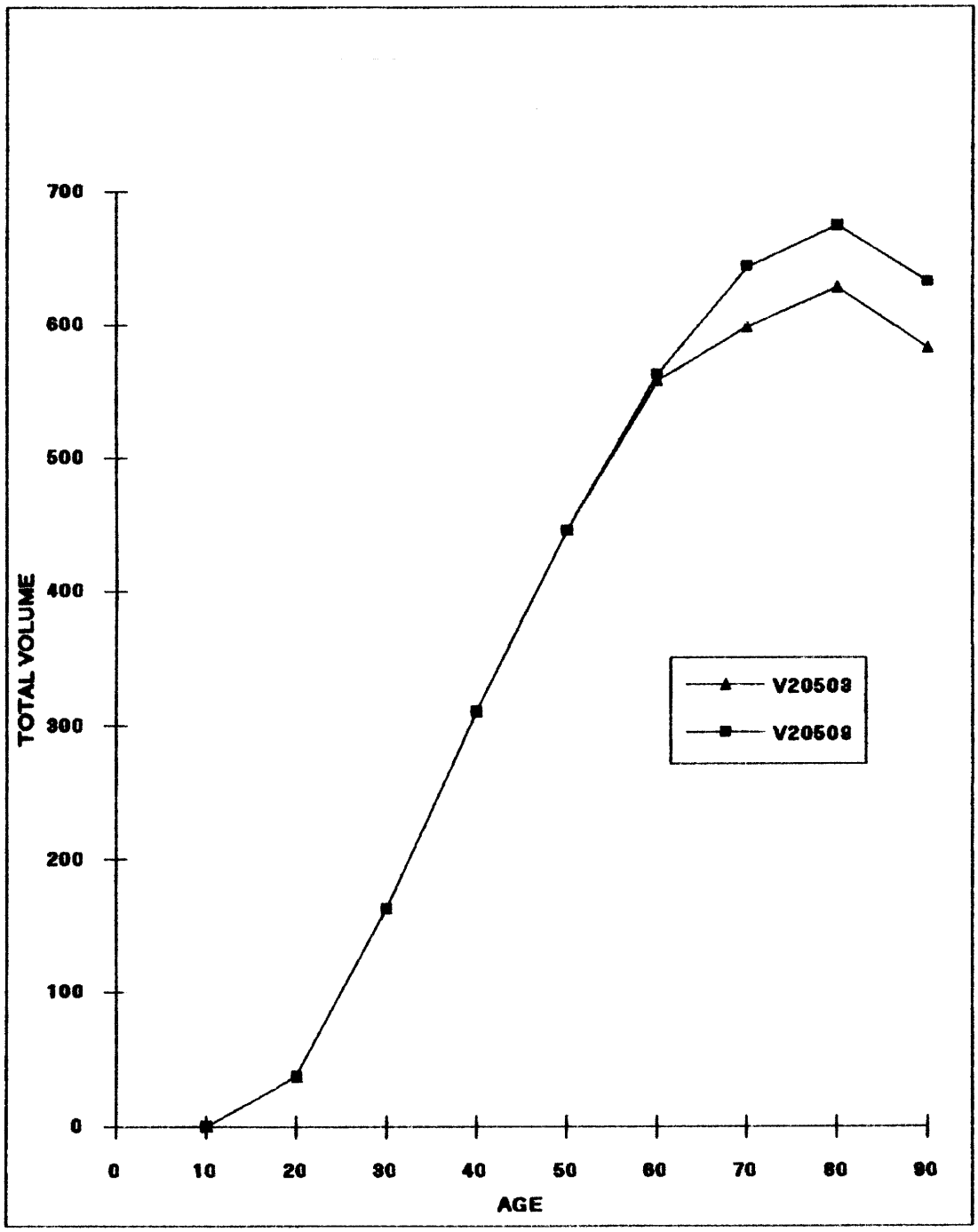
Inoculum Level 4, 1000 sph



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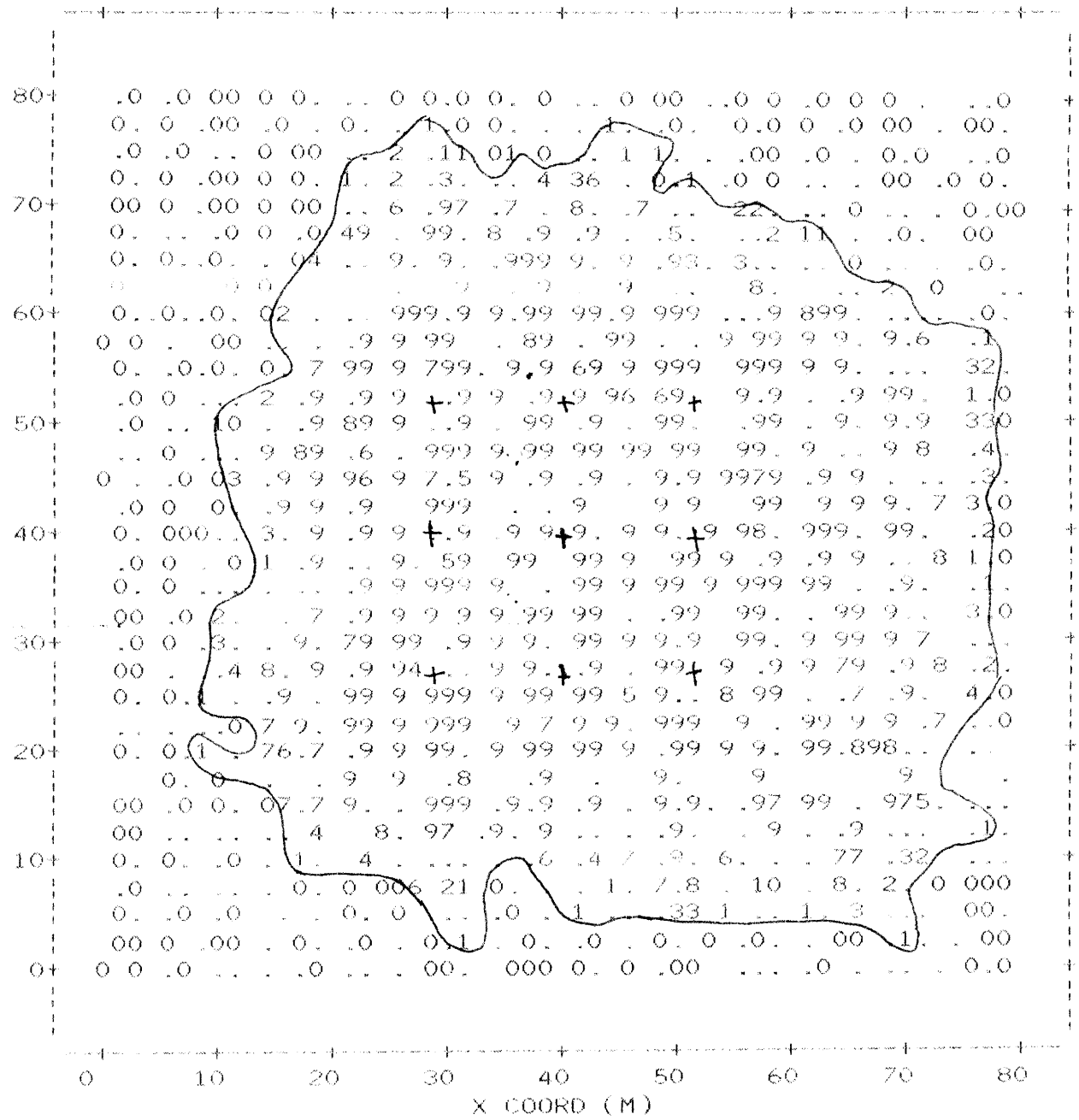

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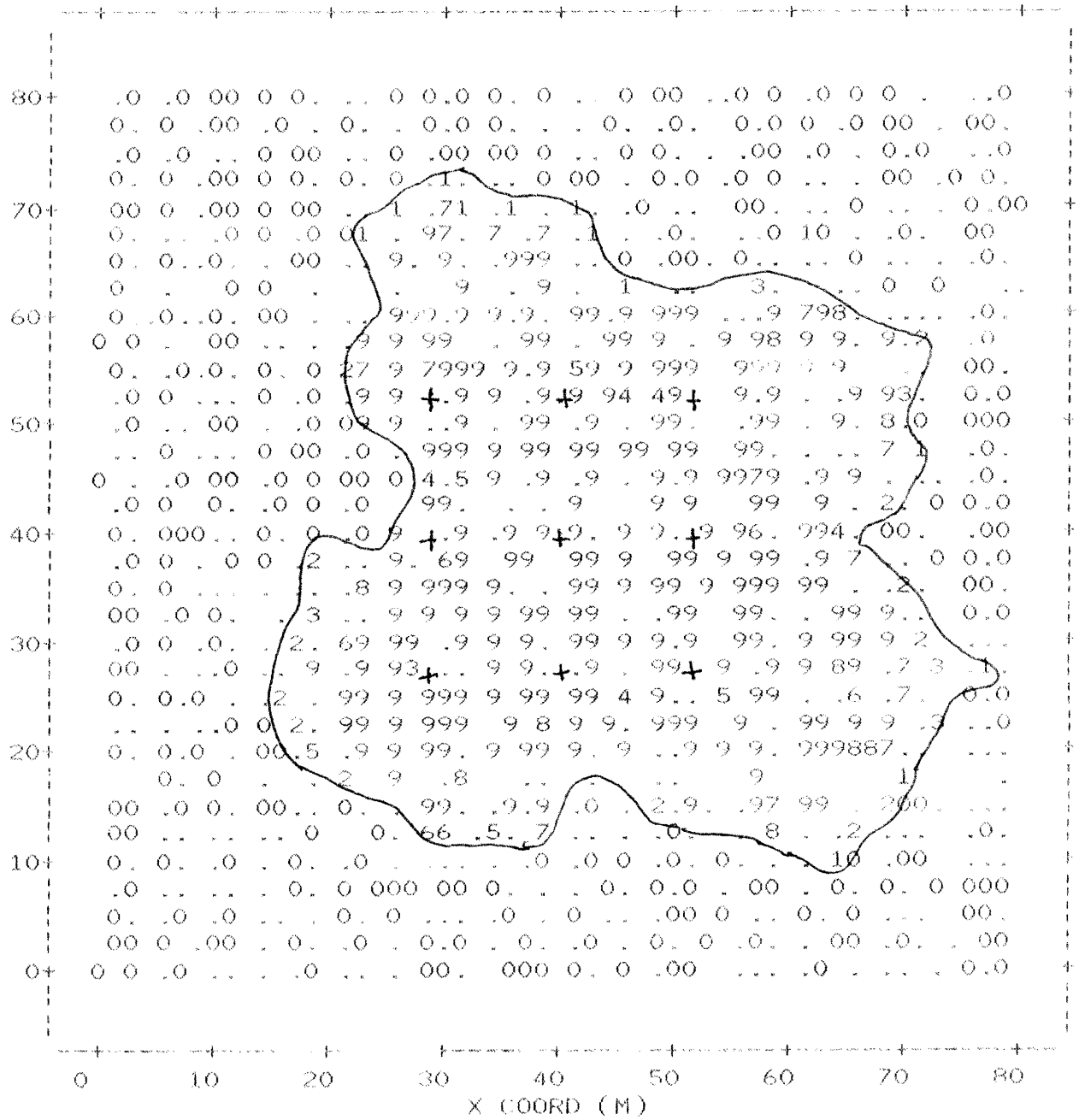

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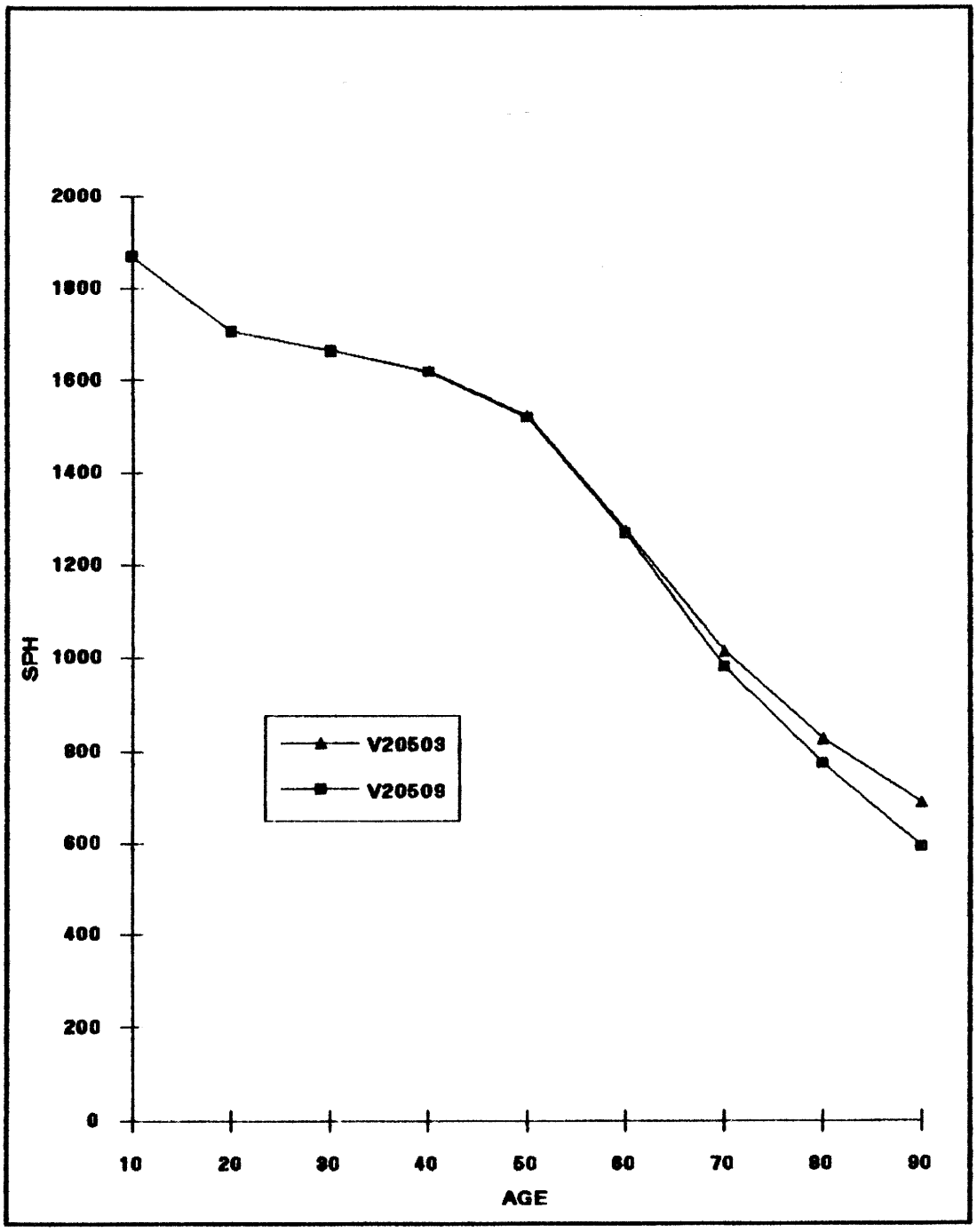

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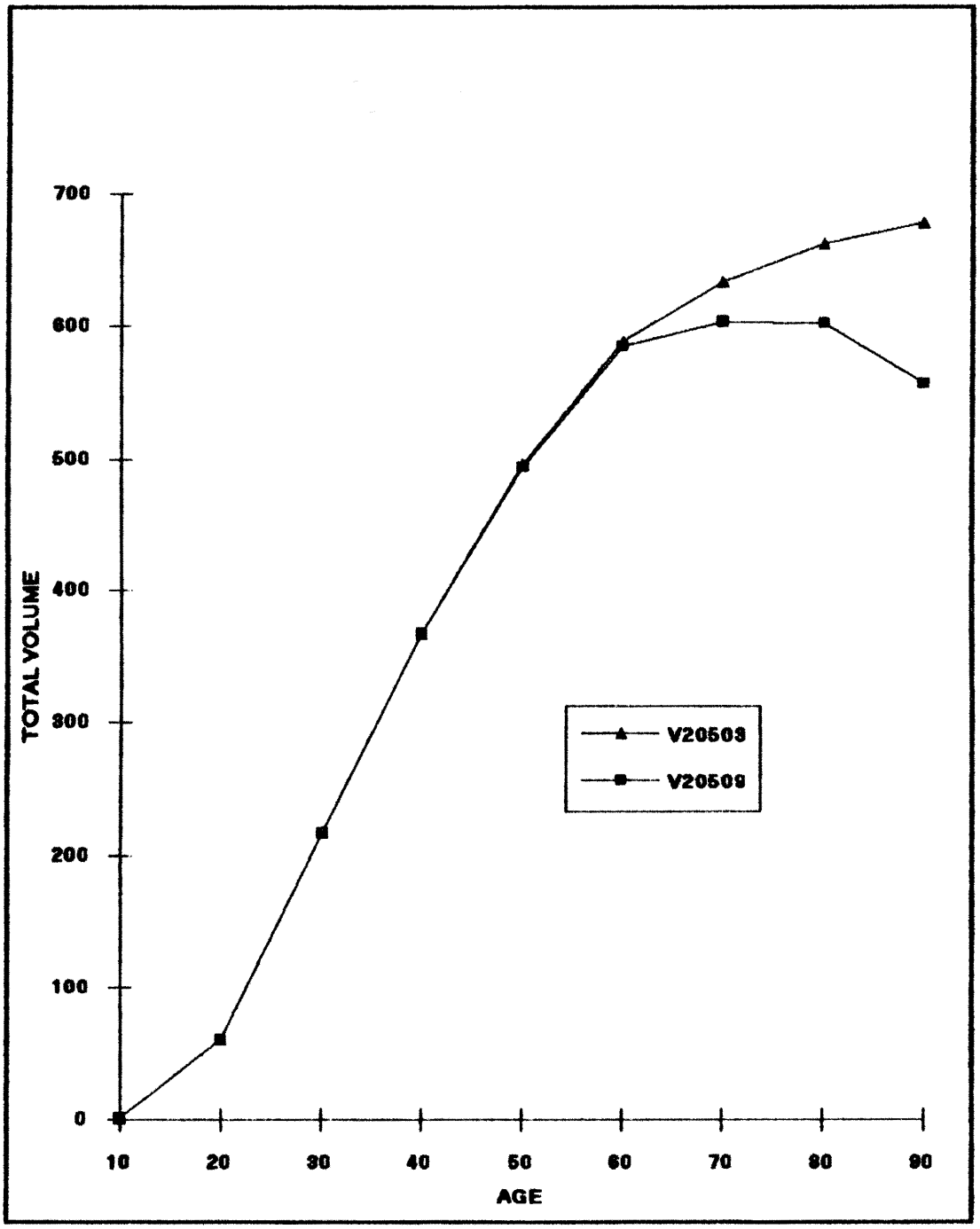
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