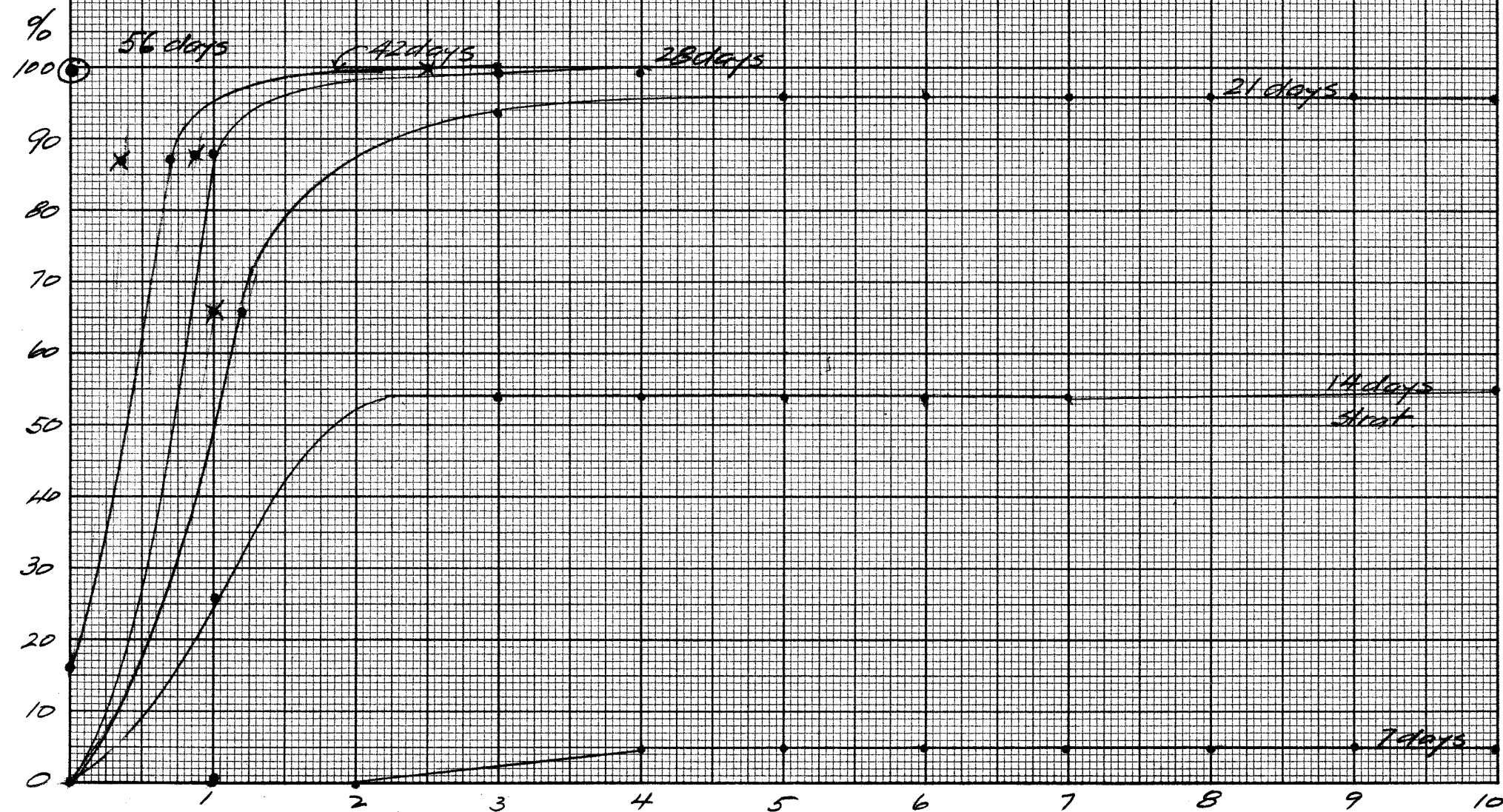


Aeration Exp 13 1945

Seed 41°F

June 6, 1969

Speed of germination



Days germination @ 70°F

Aeration Exp B 1945

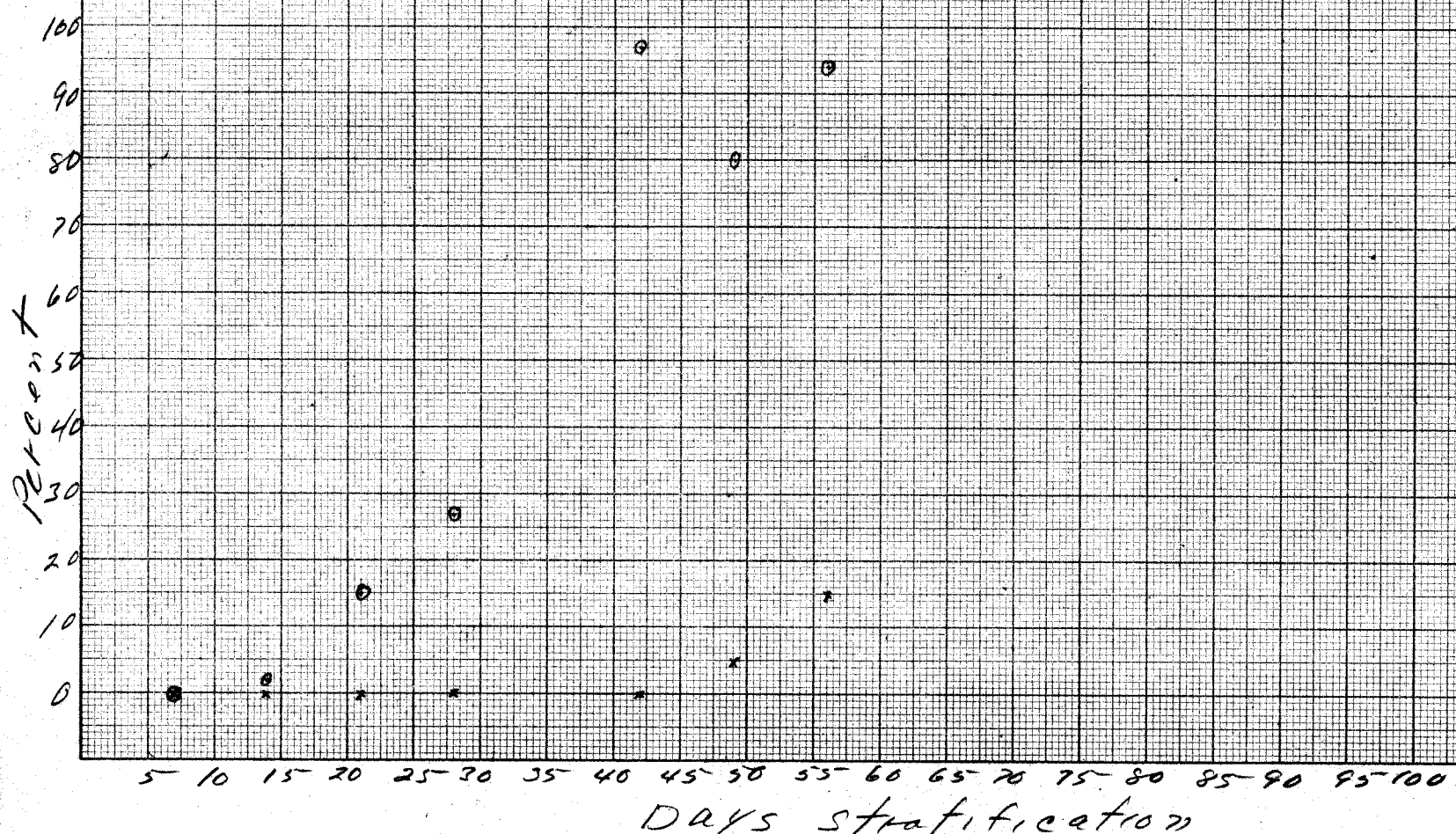
		<u>Fruit</u> <u>36°F</u>			
1	7	100	0	0	0
2	14	100	0	0	1
3	21	120	0	0	17
4	28	120	0	0	33
5	35	136	7	7	—
6	42	81	7 ¹⁰ / ₁₆	7	54
7	49	118	6 ³ / ₁₆	5	94
8	56	142	21 ³ / ₁₆	15	132
9 Mar 23	63	154	89 ¹ / ₄ "	58	142
10 Apr 3	73	141	131 ³ / ₄	93	134
11 Apr 9	79	111	104 ³ / ₄ "	94	109
12 Apr 16	86	114	111 ¹ / ₈ "	97	112
13 Apr 28	98	107	99 ¹ / ₄ "	93	102

9/27/46 acc

Experiment B

Percent Germination Viable Fruit

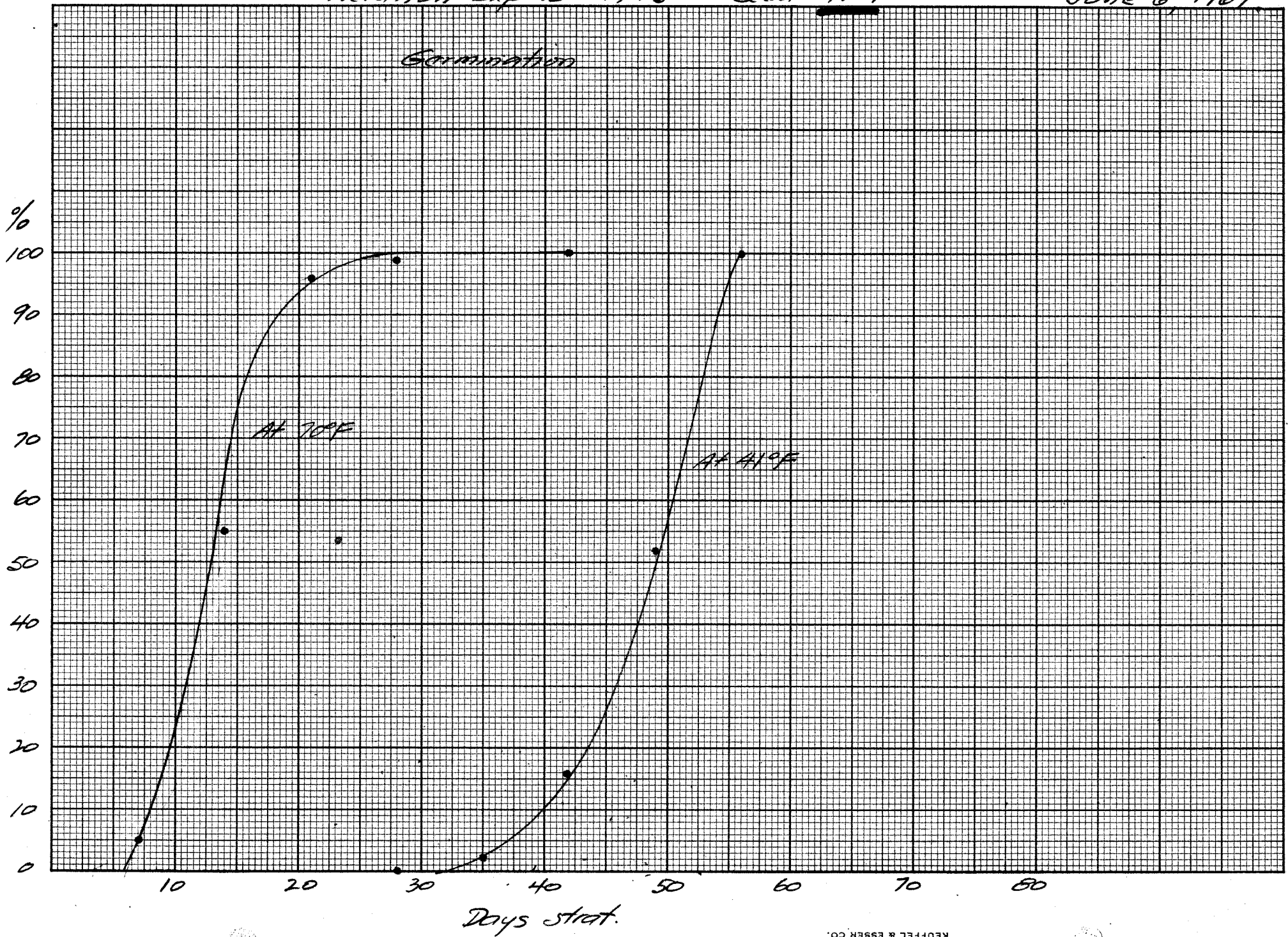
364 Fruit
x first day
o 7th day
● intersection



Aeration Exp B 1945

Seed 41°F

June 6, 1969



Compiled
Jan 12 1966
Hormay

Aeration Exp. B Jan 1945
Seed source ?

Seed 41°F

Wks	Days	Basis Strat No of viable seeds	Germination			
			In strat		At 70°F (in 10 days)	
			No	%	No	%
1	7	170	0	0	8	5
2	14	140	0	0	77	55
3	21	151	T	T	145	96
4	28	119	T	T	118	99
5	35	118	2 1/8	2	—	—
6	42	114	18 3/4	16	114	100
7	49	103	54 7/8	52	103	100
8	56	86	86 3/8	100	86	100
			In strat			
9	63	86	86 5/8		—	—

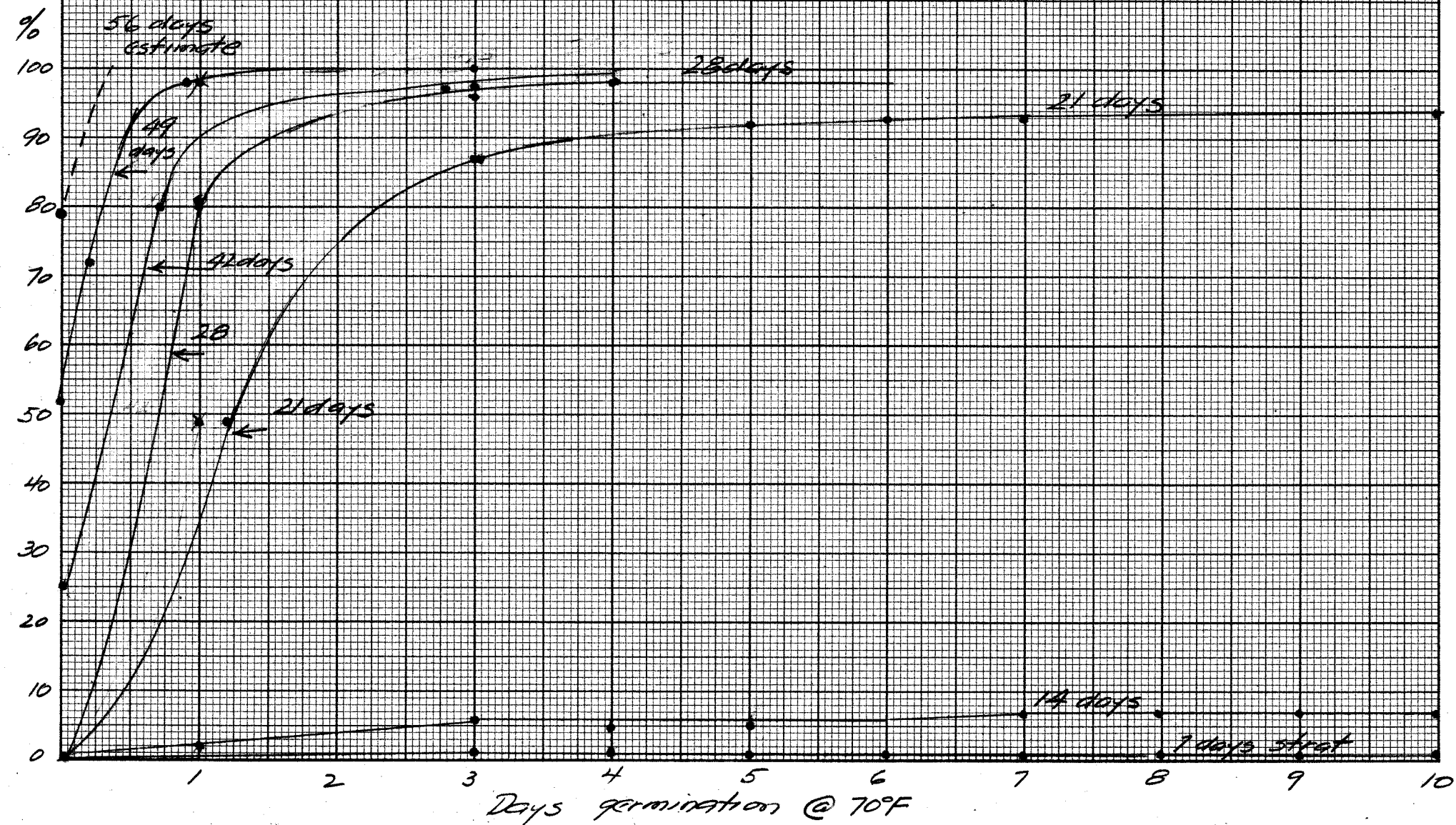
No records at 70°F

11/11 Note Pt seed collected at Doyle July 13 1944 in red juice stage about 5 to 7 days before ripening and hardening
fully Aerated @ 41°F for 30 days Germination 100%

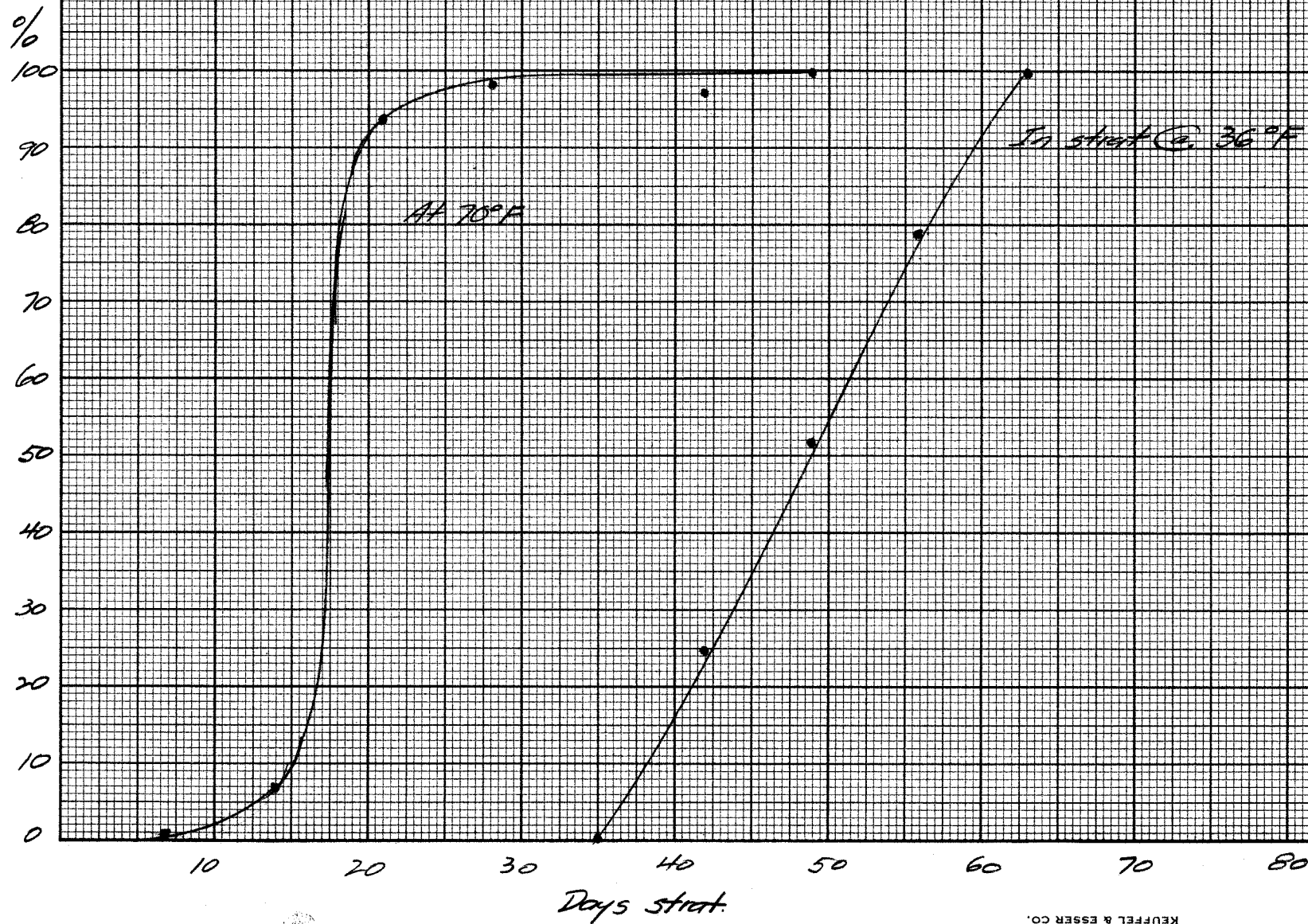
Aeration Exp B 1945 Seed 36°F

June 6, 1969

Speed of germination



Germination



40 +
23

Aeration Exp B

1945

Jan 13 1946

Holmes

Seed 36°F

Weeks	Days Start	Basis	Germination			
			In	shot	At 70°F	
	Start Jan 19		No	%	No	%
1	7	155	0	0	2	1
2	14	100	0	0	13	7
3	21	135	T	T	127	94
4	28	134	T	T	131	98
5	35	150	T	T	—	—
6	42	98	25 1/2	25	95	97
7	49	137	71 1/4	52	137	100
8	56	355	279 1/4	79	—	—
In start only						
9 Mar 23	63	355	355 3/4	100	355	100
10 Apr 3	73	355	355 3/4	100		

Aeration Exp B 1945

Seed 33°F

June 6, 1969

Germination

%
100

90

80

70

60

50

40

30

20

10

0

In strat @ 33°F

At 70°F

10

20

30

40

50

60

70

80

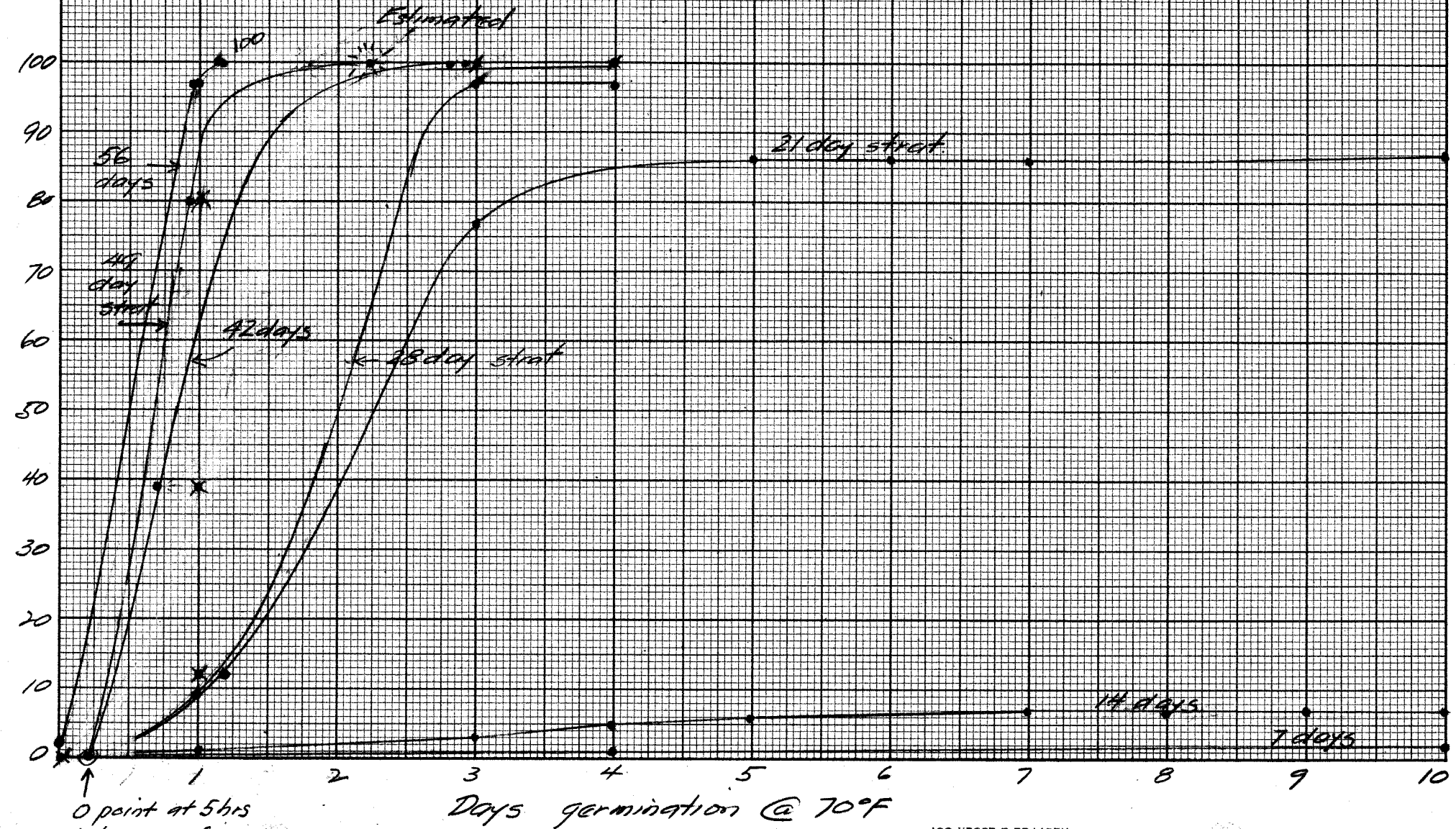
Days strat.

Aeration Exp B 1945

Seed 33°F

June 6, 1969

Speed of germination



Aeration Exp B

1945

Jan 13 1966
Hormay

Seed 33°F

Weeks	Days Strat	Basis seeds	Germination		At 70°F	
			In strat		No	%
1	7	158	0	0	4	2
2	14	170	0	0	12	7
3	21	172	0	0	149	87
4	28	140	0	0	136	97
5	35	200	0	0	no record	
6	42	110	10%	Tips	109	99
7	49	128	80%	"	128	100
8	56	100	2 1/2	2	100	100
In strat only from now on						
9	63	97	29 1/8	30	—	—
10	73	97	97 3/8	100	—	—

No roots thru
nucellus yet

Treatment Strat days	Basis	Germination @ 70°F		Viable seed basis
		Days ger	Germination	
49	128	No	No	%
		0	0	0
		1	103	80
		3	128	100
42	110	0	0	0
		1	43	39
		3	109	99
				100
28	140	0	0	0
		1	13	9
		3	136	97
		4	136	97
				100

4 days strat.

Exp. (B)

Percent germination

March 15, 1945
PCB

Date	Days	33°F	36°F	Fruit 36°F	40°F	45°F	52°F	76°F	80°F
								11 days strat.	13 days strat.
Feb. 2	0	170	175	180	140	160	143	106	0
	1	0	0	0	0	1	1	1	0
	2	1	2		26	5	6	1	0
	3								0
	4	3	6	2	54	5	8	2	0
	5	5	6		54	5	8	2	0
	6	6	6	8	54	6	8	2	0
	7			12	54	6	8	2	
	8	7	7	12	54	6	8	2	1
	9	7	7			6	8	2	
	10	7	7			6	8	2	
	11			14	55	6	8	2	
	12			15				3	1
	13			15					1
	14								1
	15							3	
	16								
	17								
	18	8	8		56	11	15		4
	19								
	20								
	21			16				5	
	22	14	14		57	14	19		
	23								
	24								7
	25			17				7	
	26								
March 2	27								
	28	16	18		63	15	20		
	29								
	30								
	31			17				12	
	32								
	33								
	34								
	35								
	36								
	37								
	38	19	20		65	15	22		
	39								
	40								
	41								
	42								
	43								
	44								
	45								
	46								
	47								
	48								
	49								

21 days strat.

Exp. (B) Percent germination

March 15, 1945
RdB

Date	Days	Cum	33°F	36°F	Fruit 36°F	41°F	45°F	53°F	76°F 17 days strat	90°F
		harsk ↓		3 rd sample						
Feb. 9	9 AM	0	172	135	120	151	156	129	58	
10	2 PM	1	0	0	0	0	4	1	0	
11		2	12	49	0	66	6	6	0	
12	10 AM	3	77	87	7	94	6	14	2	
13		4			21				2	
14	9 AM	5	86	92	22	96	6	14	2	
15	11 AM	6	86	93		96	6	14	2	
16	9 AM	7	86	93		96	6	14	2	
17		8			27	96			2	
18		9				96			2	
19	9 AM	10	87	94		96	7	14	2	
		11	87	95		end	8	14	2	
		12	87				8	14	2	
		13							2	
		14			31				2	
		15					8		2	
		16								
		17								
		18			32				7	
		19								
		20								
		21	end	end			11	15		
		22								
		23								
		24			32				14	
		25					13	15		
		26								
		27								
		28								
		29								
		30								
		31					15	19		

Exp. (3)

Percent germination

March 20, 1945

L.C.B.

Date	Day	Hrs cum.	33°F	36°F <u>4th sample</u>	Fruit 36°F	41°F	45°F	52°F	76°F 31 days strat	90°F 27 days strat
Feb. 16	9AM	0	140	134		119	115	141	60	86
17	9AM	1	0	0		T	6	1	0	1
18		2	9	81		88	10	6	0	1
19	8AM	3	97	96		99	12	9	0	2
20	9AM	4	97	98		99 end	12	9	0	3
21	8AM	5	end	end			13	9	0	
22		6					13		0	
23		7					13		0	
24	10AM	8					13	10	0	
25		9							0	
26		10							0	3
		11								
		12								
		13					14	11		
		14								
		15								
		16								
		17						14		
		18								
		19								
		20								
		21								
		22								
		23								
		24					17	18		

EXP (B)

Sample 6 out March 2 3:10 PM

Percent Germination

42 days stratification

1-5-46

B. 1404

Date	Days	Cum Hrs	33°F	36°F	Fruit 36°F	41°F
Mar 2	3:10 PM	0	0	0	0	0
" 3	8 AM	1	17	25	5	16
" 4		2	41	80		87
" 5	10 AM	3	67	97	54	100
" 6	8 AM	4	89	97	60	
	5					
	6					
	7					
	8					
	9					
	10				67	
	11					
	12					
	13					
	14				69	

TEMPERATURE		STABILIZATION		TEMPERATURE		STABILIZATION	
55°F	52°F	31 days start	27 days start				
57	159	76°F	90°F				
7	6	0	1				
12	13	0	1				
14	22	0	2				
14	24	0	3				
15	25	0	3				
26							

$$\begin{array}{r} 96 \\ 7 \\ \hline 89 \end{array}$$

EXP (B) Percent germination
49 Days Stratification

3-15-96

March 9 out 11 AM

Date	Days	Hrs	33° F	36° F	39° F	41° F	45° F	52° F	58 days	64 days
		Cum	128	137	118	103	148	140	48	30
MARCH 9 11AM	0	0		52	5	52	9	6	4	4
MARCH 9 4PM	0	5	0	72	-	55				
10 9AM	1	22	80	98	13	92		9		
11	2	46								
12 8AM	3	69	100	100	65	100	12	19		
13 2PM	4	99			75		12	21	4	4
14	5	123								
15	6	147								
16 8AM	7	165			90			22		
17	8									
18	9									
19	10						14	23	4	4

March 16 1 PM

Sample 3

56 Days Strat

Date	Days	Hrs	100	355	42	86	235	220	31	106
MARCH 16 1 PM	0	0	2	79	15	100	9	14	3	6
17 Noon	1	23	97		21		11	18	3	6
17 4PM	1	27	100							
18	2	51								
19	3	75			99		13	23	6	10
20	4	99								
21	5	123			94			24		12
22	6	147					13	24		
23	7	171								
24	8	195								
25	9	219								
26 8AM	10	235					14	24		
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18						17	26		

Pt- Exp (B) - Aeration

Jamesville

1943 seed ??

Jan 24 1945
A. H. H. H. H.

Strat temperatures °F

1/8 Jan 20

Date	Days	Ger	33	36	36	41	45	57	76°F
			5	Seed	Fruit	5	5	5	
Jan	19	5 PM	started						
Jan	22	3	0	0	0	0	0	0	0
			%	%	%	%	%	%	%
Jan	23	4	0	0	0	0	0	0	0
			%	%	%	%	%	%	%
Jan	24	5	0	0	0	0	0	0	0
			%	%	%	%	%	%	%
Jan	25	6	0	0	0	0	0	0	0
			%	%	%	%	%	%	%
Jan	26	7	0	0	0	0	0	0	0
			%	%	%	%	%	%	%

1st sample out - strat 7 days see next page for record

Note! Pt seeds put in jars and covered with water to serve as checks on aeration. These not aerated. Temps. 33, 36, 41, 45, 57, 76°F

Jan 24 1945

No seeds →						
Jan 27	0	0	0	0	0	0
Jan 29 9 AM	0	1 1/4"	0	0	8 3/4"	6 3/4"
" 30 8 AM	1	2 3/8"	0	0	8 1"	8 1"

Jan 29 3 PM						
Jan 30	1	0	0	0	0	0
" 31	1	0	0	0	0	0
Feb 1	1	0	0	0	0	0
" 3	15					
" 6	18	0	0	0	0	0

Info! Aeration @ 90°F started Feb 3, 5 PM no ger. on Feb 6 4 PM

Exp. (B) - Aeration

1st sample

7 days strat

Constant		.0061728	.006289	.0075187	.0057471	.0058823	.0059880
No seeds.		162	159	133	174	170	167
Data Days		158V 33°F	155V 36°F	Fruit 36°F	170V 41°F	165V 45°F	160V 52°F
		%	%	%	%	%	%
Jan 26	0	← sample out →					
" "	0	0	0	0	0	0	T
" 27	1	0	0	0	0	0	2.3 22 1/8 13.2
" 29	3	0	0	1 1/4	0	0	3.5 36 3/4 21.5
" 30	4	1	1.6	2 7/8	0	0	4.7 37 1" 22.1
" 31	5	4	2.4	2	0	0	4.7 38 22.7
Feb 1	6	4	2.4	2	0	0	4.7 38 22.7
" 2	7	4	2.4	2	0	0	4.7 38 22.7
" 3	8	4	2.4	2	0	0	4.7 38 22.7
" 5	10	4	2.4	2	0	0	4.7 39 23.3
" 6 4PM	11	4	2	2	0	0	4.7 39 23.3
" 9 8AM	14	4	2	2	0	0	5.3 39 23.3
constants		.0057803	.0054945	.0082644	.0070422	.0059171	.0067114
No seeds		173	182	121	143	169	71
Feb 2 Days		170V	175V	120V	140V	160V	143V
		173	182	121	143	169	71
		33°F	36°F	36°F	41°F	45°F	52°F
Feb 2	0	0	0	0	0	1	2
" 3	12	1.1	4	0	0	8	8
" 5	36	3.4	10	0	0	8	11
6 4PM	49	5	10	0	0	8	12
7 4PM	51	6	11	0	0	9	13
" 9 3AM	12	7	13	0	0	9	13
" 12 8AM	12	7	13	1	1	9	13
" 20 2PM	18	14	14	1	1	11	21
" 24 8AM	22	14	24	1	1	14	27
March 2 11AM	27	16	31	1	1	15	29
" 12 2PM	33	19	36	2	2	15	33
" 16 8AM							34
" 24			39	22			40
" 26							42
April 3			40	23			43
April 11			43	25			
April 20			45	26			
" 28			49	28			

Cont 36°F seed %
April 30 51 29

Exp (B)

(7) days

Date	Days	.61728	.6289	.1000 Frt	.57471	.58923	.59880
		33	36	36	41	45	52
		<u>7</u>	<u>45</u>	<u>30</u>	<u>09</u>	<u>510</u>	<u>644</u>
Feb 13	8AM	18					
" 20	YPM	25					
" 24	BAM	29					
March 2	11AM	35					
" 12	2 P.M.	45					
" 16							
" 24							
" 26							
April 3							
" 20							
" 28							
30							

	%	%	%	%	%	%
7	45	30	09	510	644	25
15	912	81	119	1117	1048	29
20	1219	121	124	1420	1250	30
21	1325	161	132	1822	1351	31
27	1730	191	135	2025	1555	33
		end			55	
	32				58	
					59	
	33					
	35					
	40					
	43					

practically all decayed
about 5% viable

Feb 9, 1945

Exp. (B) Aeration

7 1.4 21

Sample 3 - out Feb 9		.0058	.0074	.00083	.0066	.0064	.0077	.00094	.00800
Days strat		21 days	23 days	started Jan 19	151V	156V	129V	started Feb 29 106V	started 6 days 175V
Constants		176	139	147	157	166	132	173	135
No seeds		33°	36	36	41	45	52	76	80
Temp.		33°	36	36	41	45	52	76	80
Date	Days	%	%	%	%	%	%	%	%
Feb 9 9AM	0	0-0	T-T	0-0	T-T	6 1/4	4 1/4	1 1/4	1 1/4
10 2PM	1	21 1/6	12 6/6	16 4/4	0-0	100 1/6	6 1/6	10 3/8	6 1/6
12 10AM	3	132 3/8	7 1/17	9 8/8	3 1/8	2 1/4	1 1/8	10 1/8	6 1/8
14 9AM	5	148 1/8	8 1/24	14 9/10	4 1/8	14 5/10	1 1/2	18 1/4	2 3/4
15 11AM	6	148 8 1/2	5 9/3	14 1/4	1 1/2	14 5/10	1 1/2	18 1/4	2 3/4
16 9AM	7	148 8 1/2	5 9/3	14 1/4	1 1/2	14 5/10	1 1/2	18 1/4	2 3/4
19 9AM	10	149 8 1/2	12 7/9	14 1/7	14 1/5	9 6/11	7 1/8	14 2/2	2
20 9AM	11	149 8 1/2	12 7/9	14 1/7	14 1/5	9 6/11	7 1/8	14 2/2	2
21 8AM	12	149 8 1/2	12 7/9	14 1/7	14 1/5	9 6/11	7 1/8	14 2/2	2
24 10AM	15	149 8 1/2	12 7/9	14 1/7	14 1/5	9 6/11	7 1/8	14 2/2	2

Mar

Sample 4 - out Feb 16 9AM		.00714	.00746	.00833	.00840	.00869	.00709	.0172	.01388
Days strat		28 days	28 days	28 days	28 days	28 days	28 days	28 days	28 days
Constants		146	144	141	142	125	144	63	83
No seeds		146	144	141	142	125	144	63	83
Feb 16 9AM	0	0-0	0-0	0-0	T-T	7 3/8	3 3/8	1-0	0-0
Feb 17 9AM	1	13 1/6	9 1/8	8 1/0	0-0	10 5/8	8 1/2	10 3/8	6 0
" 19 8AM	3	136 5/9	12 9/12	9 6/8	4 1/4	7 1/8	12 1/8	9 1/4	1-2
" 20 9AM	4	136 9/1	13 1/12	9 8/25	21 end	9 1/4	12 1/3	9 1/4	1-2
" 21 8AM	5	end	end	27 22	15	13 1/3	9 1/4	1-2	0
" 24 10AM	8			33 27	15	13 1/4	10 1/4	1-2	1

Sample 5 - Feb 23 10 AM		.00714	.00746	.00833	.00840	.00869	.00709	.0172	.01388
Days strat		35 days	35 days	35 days	35 days	35 days	35 days	35 days	35 days
Constants		146	144	141	142	125	144	63	83
No seeds		146	144	141	142	125	144	63	83
Feb 23 10 AM	0	0-0	0-0	0-0	T-T	2 1/8	2 1/8	1 1/4	4 0
Feb 24 10 AM	1	118V	182V	161V	155V	175V	175V	175V	175V

(2) Doyle Seed collected in red juice stage July 13/44 Into 44°F aeration
 Jan 24/45, out Feb 23/45
 30 days strat.
 Feb 23
 11 1/8
 105
 116 100%

Exp (B) Aeration cont.

(21 days cont.)

Date		Days	33°	36°	36° 120V Fruit	41°	45°	52° (132)	76° (113) 106V	80°	90° 100800
March 2	NAM	21	end	end	19 16 ⁷⁰	end	17 11 19	15 5	5		5 4 ⁷⁰
March 6	4PM	25			20 17		21 13 20	15 7	7	7	8 6
"	12 2PM	31			21 17		24 15 25	19 13	12		13 10
"	16				end						

	Days				28 days cont.					
March 2	NAM	14	end	end	37 31 end	16 14 16	11 1	2 1	1	
March 6	4PM	18			38 32		20 14 4	8 7	3	4
"	12 2PM	24			39 32	20 17 25	18 8	14 5	7	
"	16 8AM				40 33	29 21				
					end.					

113
112

Exp **(B)**

.01234
Fruit

.00877

.00662

.00719

31 days 27 days

116	104	117	126	159	143	72	98
110V	98V	81V	114V	151V	139V	68V	96V
33°F	36°F	36°F	41°F	75°F	57°F	76°F	70°F

Sample 6: - out Mar 2, 3:10 PM **42 days**

Mar 2	0	10% TT	25	1/25	10% T	18	3/6	13	1/4	10	1/8	0	0	1	1/1
Mar 3 8 AM	1	43	39	78	90	4	5	99	87	18	12	18	13	0	0
" 5 10 AM	3	109	99	95	97	44	54	14	100	21	14	31	22	0	0
" 6 AM	4	109	99	95	97	49	60	end	21	14	34	24	0	0	3
Mar 14	10	end	end	52	64										
Mar 16 AM	14			54	67			22	15	35	25	0	0	3	3
				56	69							36	26		

Mar 9 11 AM out

.00781	.00729	.00847	.00970	.00675	.00714	.00716	.02083	.04
133	144	127	110	150	143	50	84	
178V	137V	118V	103V	148V	142V	144V	148V	80V
80% T	71	1/4	52	6	1/8	3/8	54	1/6
Mar 9 11 AM	0	0	0	99	72	-	57	55
Mar 9 4 PM	0	103	80	135	98	15	13	9
" 10 9 AM	1	178	100	137	100	77	65	103
" 12 8 AM	3	end	end	89	75	end	18	12
" 13 2 PM	4	no more	no more				12	30
" 16 8 AM	7	get	94	80			31	22
" 19	10		94	80			20	14
			end				end	end

Count all ger
in jars

Samples taken March 16/45

Exp. (B)

Date	Days	106 100V	355V	142V	86 86V	245 235V	229 220V	45 days 31	41 days 106
		33°F	36°F	36°F	41°F	45°F	52°F	76°F	90°F

March 16	1 P.M.	0	Sample 8 out March 16 1 P.M.						
" 16	" "	6	2 1/16 2 2/7 1/4 1 2/16 1 5/8 86 3/8 100 22 1/4 1 1/2 31 1/4 1 1/2 1 1/4 3 1/2 1/16 3/8						
			end-100% germ						
			Just growth and ger in strat from now on.						
" 17	noon	1	97	97	101	71	27	11	40
" 17	4 P.M.	1	100	100			18	1	36
" 19		3	end		176	89	30	13	50
" 21	2 P.M.	5			132	94		52	24
" 22	2 P.M.	6					31	13	52
" 26	8 A.M.	10					33	14	53
April 3							40	17	57

See replication

From this date on no more samples taken but ger seeds counted. This gives ger in strat

Mar 23	2 P.M.	105	370	97V	355V	159	154V	574	603	121	371
" 24	10 A.M.			Roots		Roots					
" 26	8 A.M.			29 1/8 30 3/8 25 1/8 9 1/8 1/4 5/8 58 1/2 4 93 1/2 75 0 - 0 15 - 7							
" 28				355 100 116 75		April 3	73 13 157 26 0 - 0 34 9				
April 3				141 91		April 7	98 17 190 32 0 - 0 53 14				
				142 92		" 12	114 20 22 37 0 - 0 68 18				
				142 92		" 24	133 23 254 42 4 - 3 103 28				

499
76 lab
Earliest man

April 3		105	370	178	97V	355V	142V	164 29 3 69 61	end		
" 5								178 31 380 63	all next decayed	138 31	
" 9											
April 9	5 P.M.										
" 11											
" 16											

111V
36°F
104 1/4
107 96
109 98

end
131 2/4
133 96 3/8
134 95 3/8
end end

Exp (B)

36°F

Fruit

150

114V

← out →

111 1 1/8" 97

112 98

112 end 98

172 107V

out

99 1 3/4" 93

102 95

102 end 95

April 16

" 16

" 18

" 20

April 28

" 28

" 30

May 2