

Effects of Three Lighting Programs During Grow on the Performance of Commercial Egg Laying Varieties. 1. Growing Period

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Experiment:

- Hy-Line W-36 (**W36**), Hy-Line W-98 (**W98**), and Hy-Line Brown (**HYB**) commercial strains were subjected to three step down rearing lighting programs.
- 500 pullets were used from each strain.
- There were three replicates per lighting program.
- Experiment was carried out in two trials:

	<u>Hatch</u>	<u>End</u>
- Trial #1: W36 and W98 tested:	01-28-05	05-12-06
- Trial #2: W98 and HYB tested:	09-08-05	12-15-06

Management:

- **Birds were wing banded at hatch.**
- **Pullets were reared in floor-pens.**
- **Pullets were not beak trimmed.**
- **A phase feeding program was used according to Hy-Line Commercial Management Guides**
- **Corn-Soybean meal based crumbled diets were fed during growing.**



Lighting Schedule (1):

Slow:

One hour biweekly decrease of light from 20h of light at 2wk of age.

Reaching a 10h photoperiod by 17wk of age.



Lighting schedule (2):

Moderate:

One hour weekly decreases in photoperiod from 2 to 12 wk of age, until a 9h photoperiod was achieved.

Lighting schedule (3):

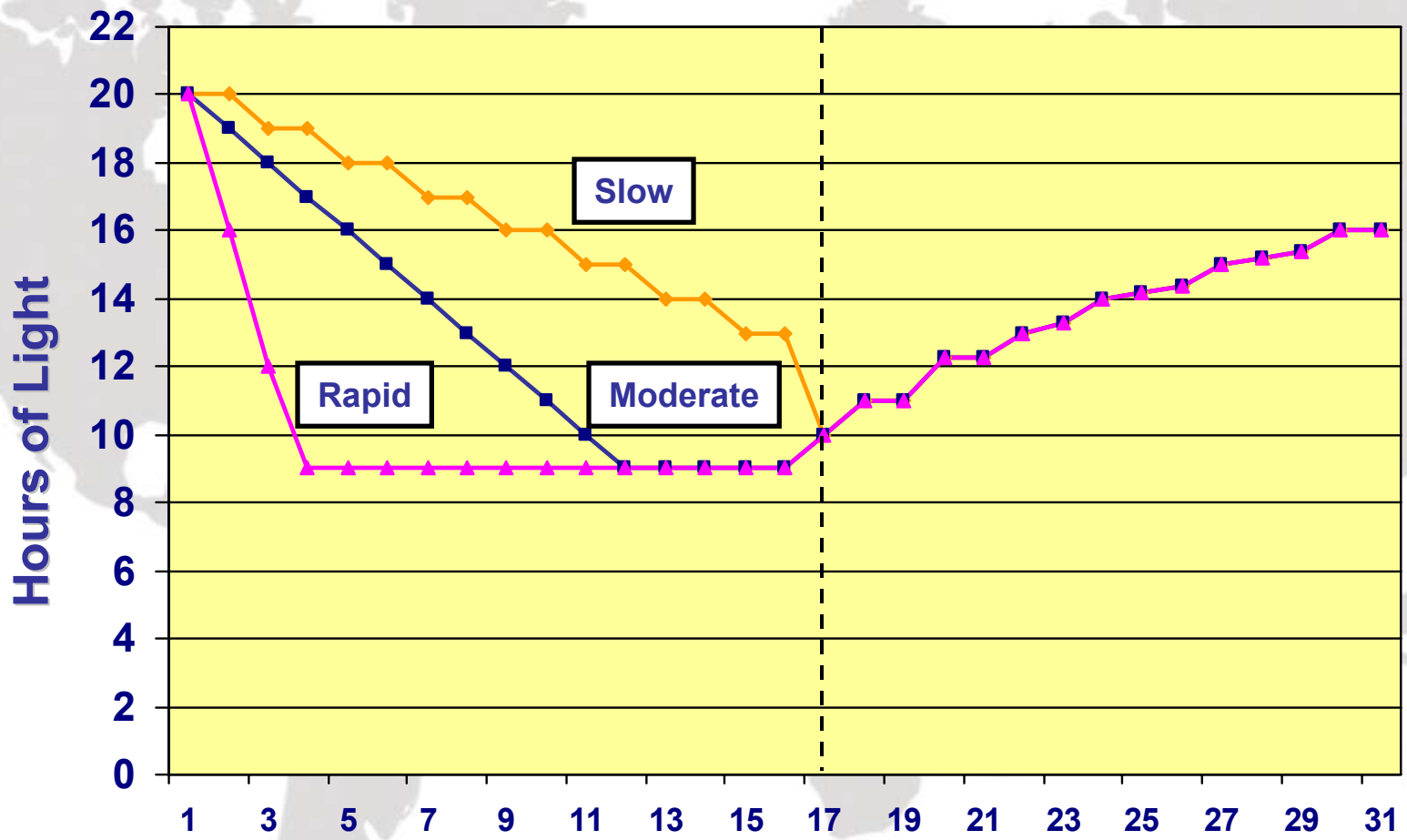
Rapid:

Four hour decrease in photoperiod at 2wk of age and at 4wk of age.

Light hours decreased to 9h and then held constant until 16wk of age.



Three Rearing Light Programs



Lighting:

Light intensity was the same for all three pullet lighting regimes:

1st week; all chicks were exposed to 30 lux light intensity

2nd-5th weeks; intensity decreased 5 lux/week

6th-17th weeks; all pullets received 7 lux of light intensity



Traits:

Weekly body weights were individually collected throughout the experiment



RESULTS



Light Test #1: W36 Weekly Body Weights by Light Programs

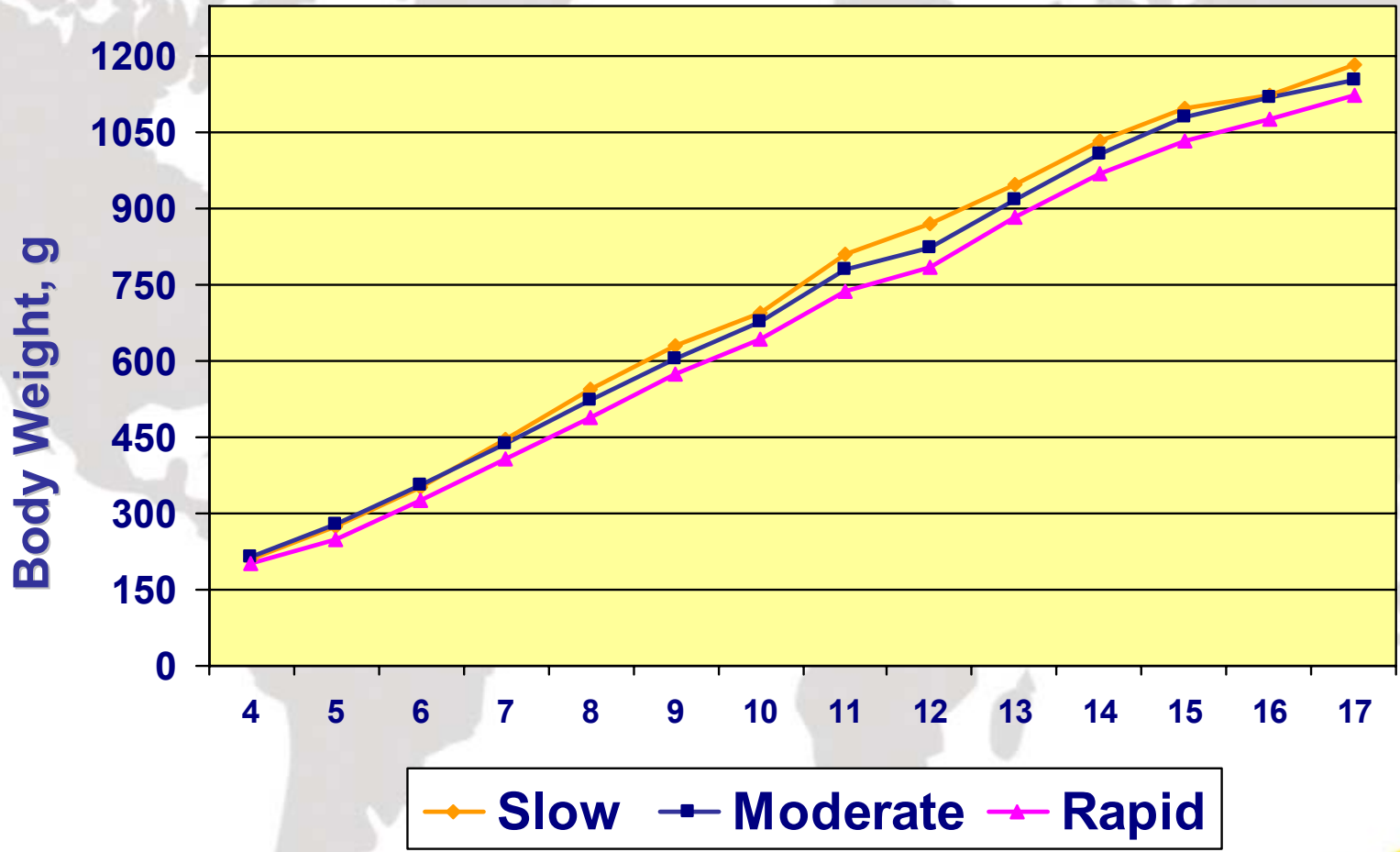
Age Weeks	Slow	Moderate	Rapid
4	211	213	201
5	274	280	250
6	353	354	324
7	445	437	408
8	545	523	490
9	632	606	576
10	694	676	644
11	812	782	738
12	872	823	785
13	948	921	883
14	1034	1007	969
15	1100	1081	1034
16	1126	1120	1076
17	1186	1155	1125

Light Test #1 : W36 Weekly Body Weight Differences Between Light Programs

Age Weeks	S-M, g	R-M, g	S-R, g
4	-2	12	10
5	-6	30	24
6	-1	-30	30
7	8	-29	37
8	22	-33	55
9	26	-30	56
10	18	-32	50
11	30	-44	74
12	49	-38	87
13	27	-38	65
14	27	-38	65
15	19	-47	66
16	6	-44	50
17	31	-30	61
Average	18	-34	52



Light Test #1, W36 Body Weight 4-17wks



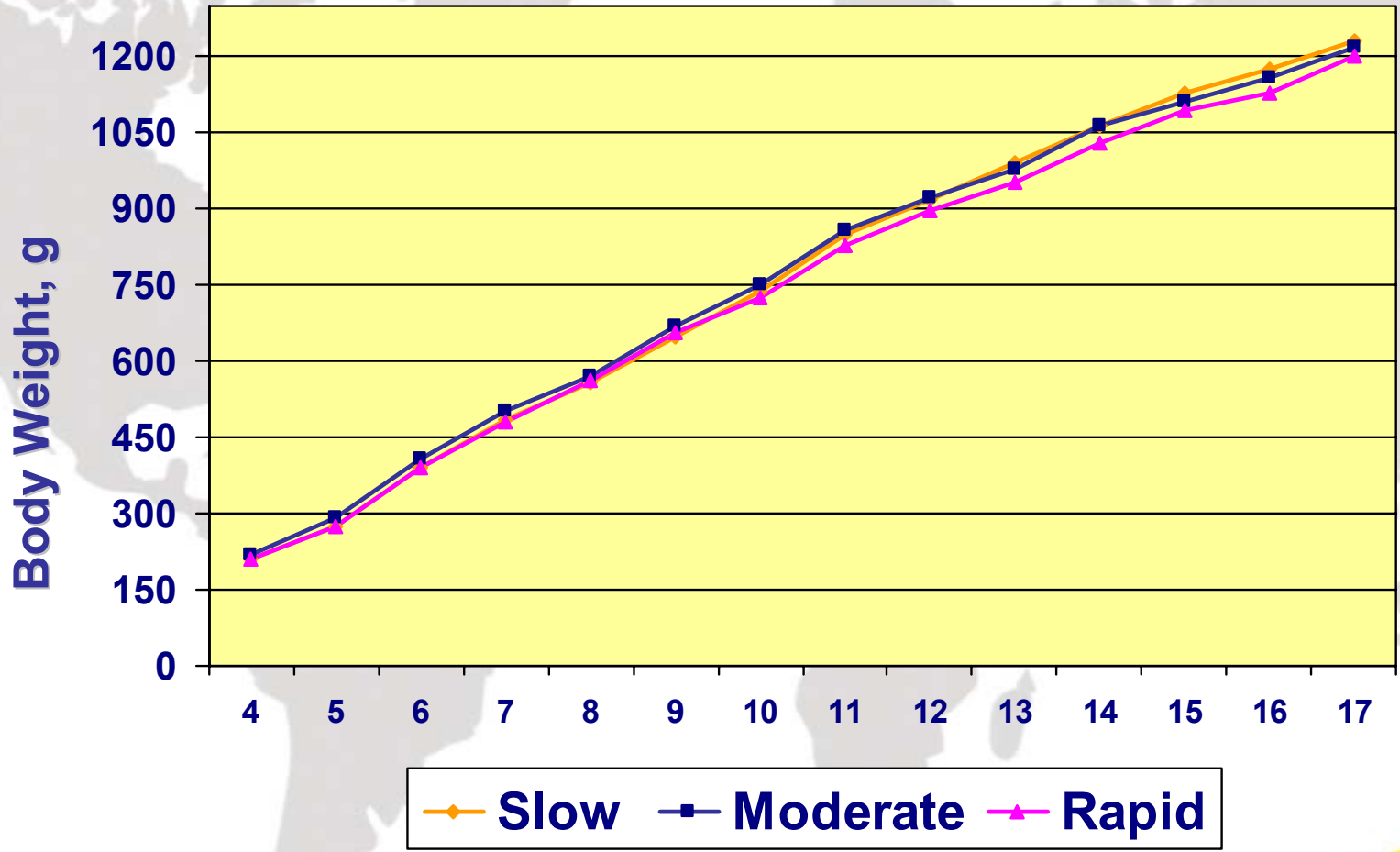
Light Test #1: W98 Weekly Body Weights by Light Programs

Age Weeks	Slow	Moderate	Rapid
4	211	218	210
5	275	293	276
6	391	408	392
7	484	501	481
8	556	572	561
9	650	668	657
10	737	750	724
11	848	859	828
12	918	921	896
13	993	977	953
14	1063	1065	1029
15	1127	1113	1094
16	1176	1157	1128
17	1232	1218	1203

Light Test #1 : W98 Weekly Body Weight Differences Between Light Programs

Age Weeks	S-M, g	R-M, g	S-R, g
4	-7	-8	1
5	-18	-17	0
6	-16	-16	0
7	-17	-19	3
8	-15	-10	-5
9	-18	-12	-6
10	-14	-26	13
11	-11	-30	20
12	-3	-25	22
13	16	-24	40
14	-2	-35	34
15	14	-19	33
16	19	-28	47
17	14	-15	29
Average	-4	-20	16

Light Test #1, W98 Body Weight 4-17wks



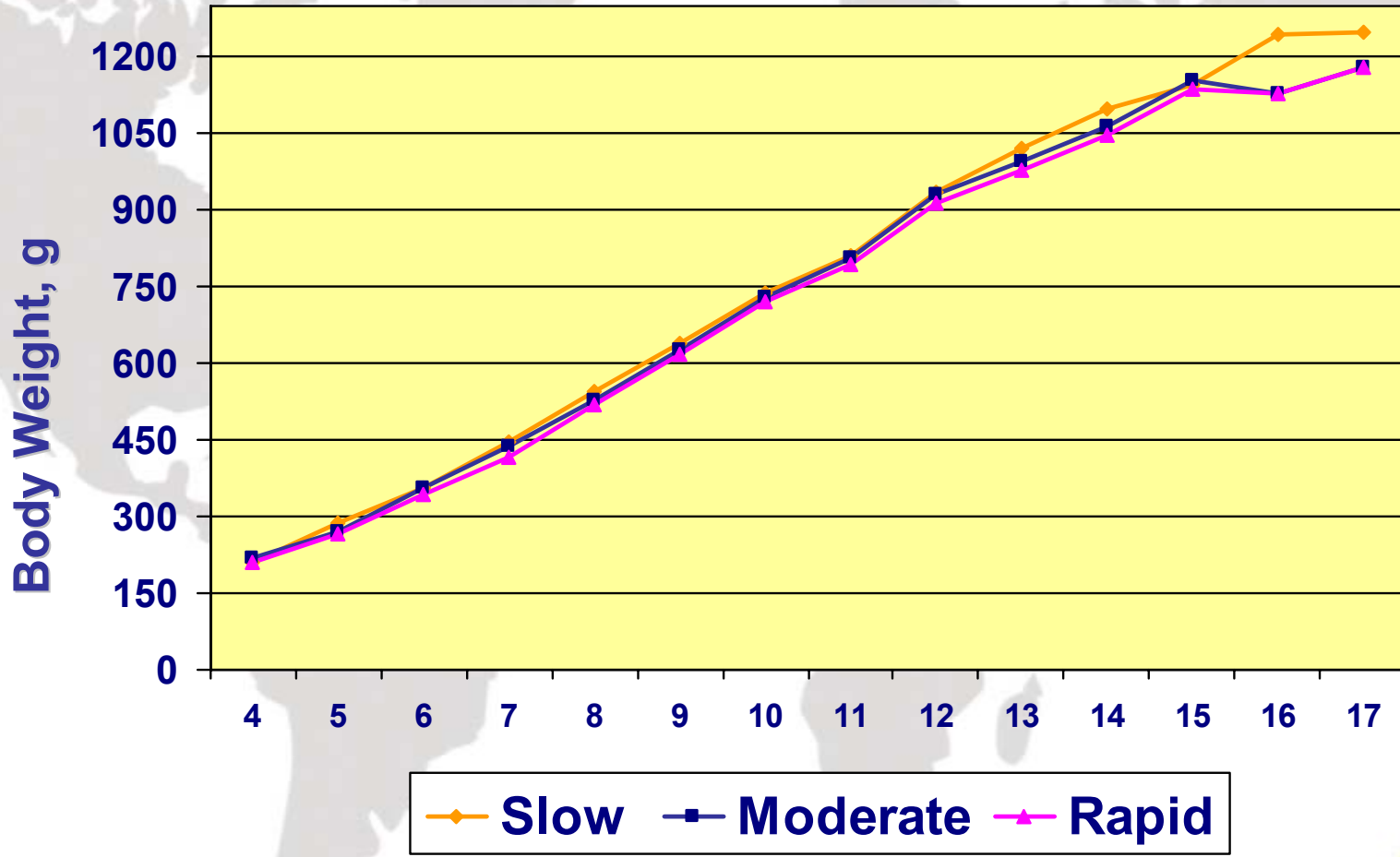
Light Test #2: W98 Weekly Body Weights by Light Programs

Age Weeks	Slow	Moderate	Rapid
4			
5	289	272	264
6	356	353	342
7	446	436	418
8	543	529	517
9	640	625	618
10	737	730	719
11	812	808	792
12	933	931	916
13	1020	995	976
14	1097	1066	1046
15	1143	1152	1135
16	1244	1130	1128
17	1249	1181	1179

Light Test #2 : W98 Weekly Body Weight Differences Between Light Programs

Age Weeks	S-M, g	R-M, g	S-R, g
4			
5	18	-8	25
6	3	-12	14
7	10	-18	29
8	14	-12	27
9	15	-7	22
10	6	-11	17
11	4	-16	19
12	2	-15	18
13	26	-19	44
14	31	-20	51
15	-8	-16	8
16	114	-3	117
17	68	-2	70
Average	23	-12	35

Light Test #2, W98 Body Weight 4-17wks



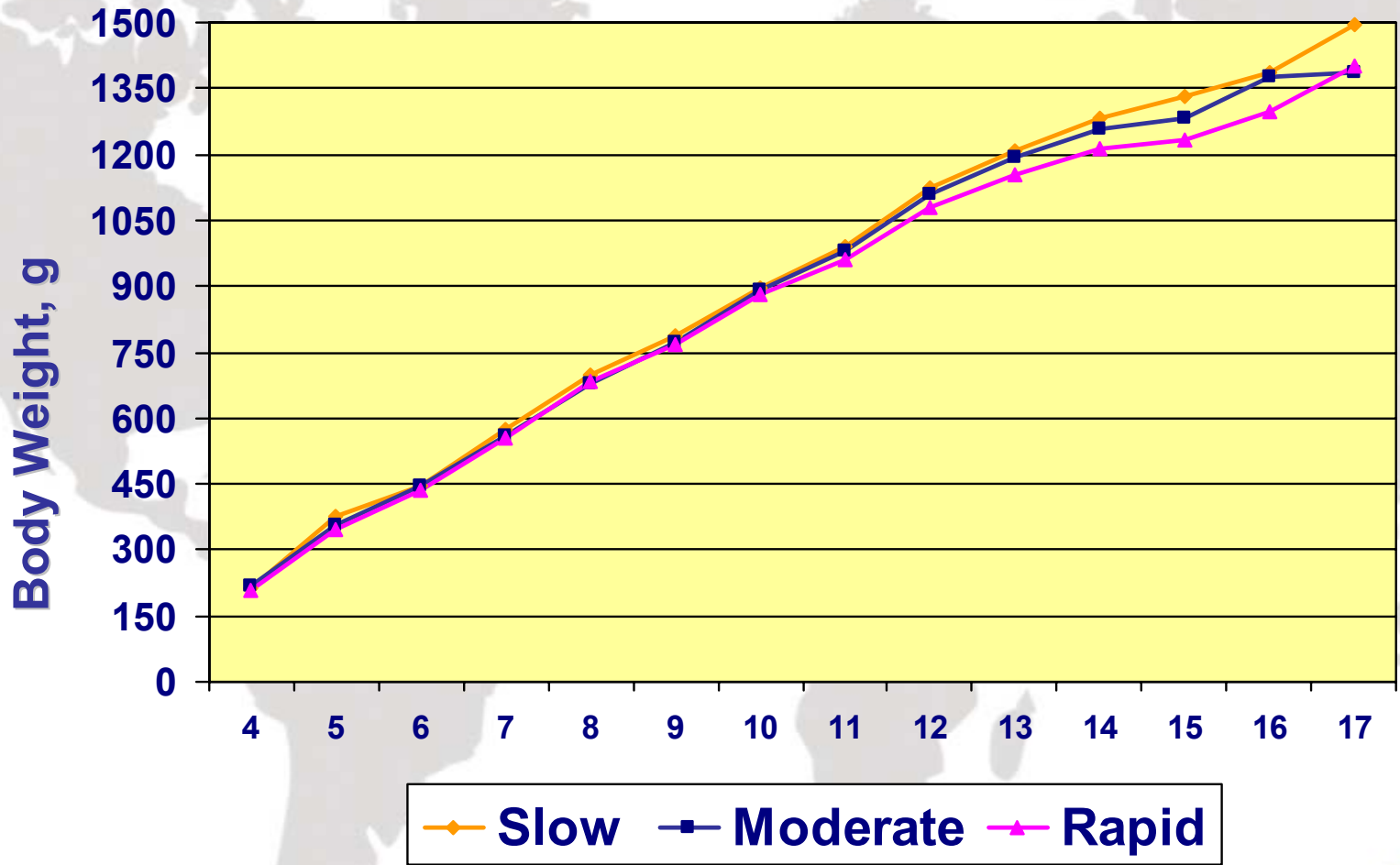
Light Test #2: HYB Weekly Body Weights by Light Programs

Age Weeks	Slow	Moderate	Rapid
4			
5	376	358	349
6	447	444	437
7	574	562	555
8	699	677	685
9	789	774	768
10	896	889	879
11	991	980	959
12	1124	1109	1080
13	1207	1192	1152
14	1280	1255	1213
15	1333	1281	1232
16	1384	1377	1295
17	1493	1387	1403

Light Test #2 : HYB Weekly Body Weight Differences Between Light Programs

Age Weeks	S-M, g	R-M, g	S-R, g
4			
5	18	-9	27
6	2	-7	9
7	13	-7	19
8	22	9	13
9	15	-6	21
10	7	-10	16
11	11	-21	32
12	15	-29	44
13	15	-40	55
14	25	-42	67
15	52	-49	101
16	7	-82	89
17	107	17	90
Average	24	-21	45

Light Test #2, HYB Body Weight 4-17wks



Conclusions

- Slow light decline birds tended to grow faster and, with the largest weight gain compared to Moderate, who were intermediate, and Rapid who were lightest at most ages.
- Additional conclusions of differences between treatments for growth and performance traits during the laying period are covered in our next presentation.

Thank you!

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