Aviagen®

Grading to Manage Uniformity

ENTER

INTRODUCTION

The grading to manage uniformity PDF is an interactive document designed to take poultry managers step by step through grading breeders.

NAVIGATION

- On each page are blue buttons. Select the button most appropriate to your situation to see more information and navigate through the document.
- HOME — The home button will return you to this page.
- CONTENTS — The contents button will return you to the contents page.

References: How To Individually Weigh Broiler Breeders.
Aviagen Parent Stock Manual.

NEXT

PRINCIPLES

Within populations there is always natural variation, even at day-old. At placement, flock body weights should follow a normal distribution with a low variation. As birds grow, the variation within a flock will increase due to the different responses of individual birds to factors such as vaccination, disease, competition for feed etc.

Minimizing body weight variation within the flock makes flock management easier. Birds in a similar physiological state will respond more uniformly to management factors such as light stimulation and increases in feed level.

The purpose of grading, is to sort the flock into 2 or 3 sub-populations of different average weight so that each group can be managed in a way that will result in good whole flock uniformity at point of lay (POL).

NEXT

GENERAL PROCEDURES

Grading should be done between 28 and 35 days (4 and 5 weeks) of age. If completed later than this, the time available to resolve issues (ideally by 63 days) is reduced, and the procedure is less effective.

Grading is based on the variation in body weight within a flock at the time of grading. A highly variable flock with a large spread of body weights around the average will need to be split into more sub-populations than a less variable flock.

After grading, each sub-population should be managed according to its weight with the aim of bringing all populations back to target by POL.

Variation within a flock can be measured in two ways:

1. Coefficient of variation (CV%) - this measures the variation (spread) of body weights within the flock; the **lower** the CV%, the **less variable** the flock is.
2. Uniformity (%) - this measures the evenness of body weights within a flock; the **higher** the uniformity, the **less variable** a flock is.

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CONTENTS

RECORDING BODY WEIGHT

A. Have you weighed a representative sample of the population to be graded?

Prior to grading a minimum sample of 2% of the population (or 50 birds, whichever is greater) should be weighed to calculate average flock weight and variation in body weight within the flock.

YES

NO

RECORDING BODY WEIGHT

B. What method do you use to determine body weight variation?

CV%

UNIFORMITY %

HOME

GRADING USING CV%

C. What is the CV%?

Flock Uniformity CV%	Percentage in Each Population after Grading			
	2 or 3-way grade	Light (%)	Normal (%)	Heavy (%)
10-12	2-way grade	20	~ 80 (78-82)	0
12-14	3-way grade	22-25	~ 70 (66-73)	5-9
>14	3-way grade	28-30	~ 58 (55-60)	12-15

<10 | 10-12 | 12-14 | >14

GRADING USING UNIFORMITY

D. What is the Uniformity (+/- 10%)

Uniformity	2 or 3-way Grade
65%-80%	2-way grade
65% or lower	3-way grade

>80%

65%-80%

<65%

RECORDING BODY WEIGHT

E. How do you record body weight?

- Manual - recorded by hand on a body weight recording sheet.
- Automatic - recorded automatically by the scale.

MANUAL **AUTOMATIC**

RECORDING BODY WEIGHT

Manual Body Weight Recording

- All individual bird weights from the sample should be recorded on a body weight recording chart.
- The body weight parameters below should be calculated.

Flock Details	Kg	Lbs
Age		
Total Birds Weighed		
Target Body Weight		
Average Weight		
Body Weight Range		

NEXT

RECORDING BODY WEIGHT

Automatic Body Weight Recording

- Automatic body weight recording is preferred by Aviagen as the number of birds weighed, average body weights and CV are calculated automatically.

CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.446

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.98

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

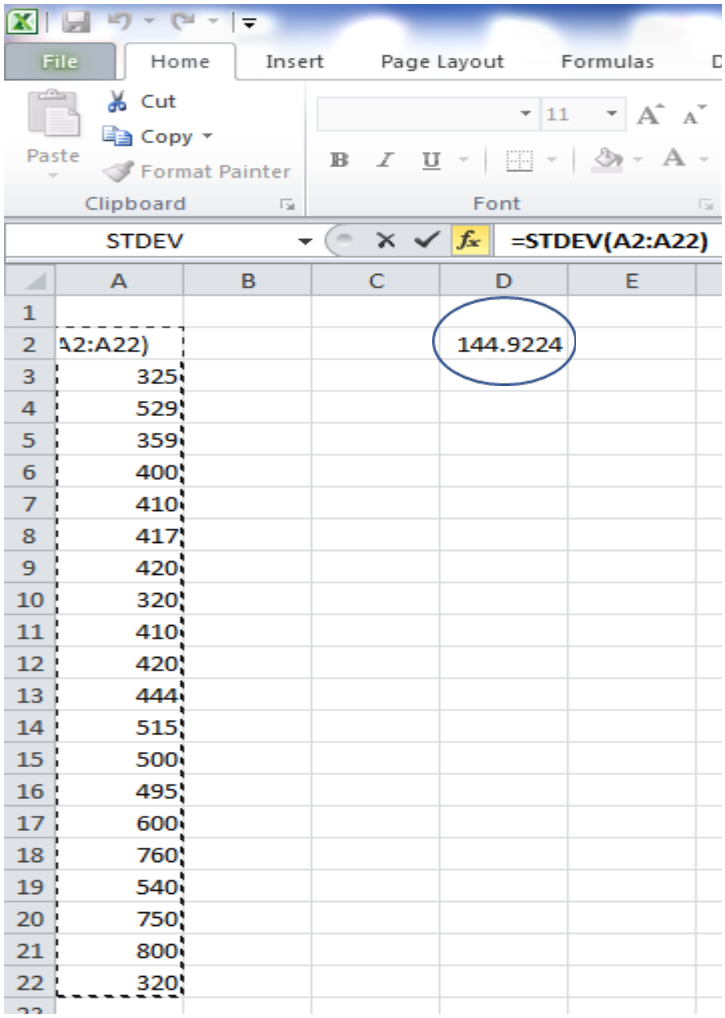
NEXT

GRADING USING CV%

Calculate Standard Deviation (STDEV)

- Standard deviation describes how the body weights of a group of birds varies around the mean.

- The higher the STDEV the greater the variation.



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GRADING USING CV%

Has the CV% been calculated?

YES

NO

GRADING USING CV%

Has the Standard deviation been calculated?

YES

NO

GRADING USING CV%

Calculate CV%

- CV% = (Standard Deviation x 100) ÷ Average body weight)

NEXT

GRADING USING UNIFORMITY

Has the Uniformity (+/-10%) been calculated?

YES

NO

GRADING USING UNIFORMITY

Calculating Uniformity

CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.446

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
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CURRENT DATA IMPERIAL
TOTAL WEIGHED: 197
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Band limits	Total
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1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

- Ideal body weight range is +/- 10% of average sample weight.

10% of average sample weight:
0.01 x 446 g (0.98 lbs) = **45 g (0.099 lbs)**

Therefore,
+10% of average weight:
446 + 45 g (0.98 + 0.099 lbs) = **491 g (1.08 lbs)**

-10% of average weight:
446 - 45 g (0.98 - 0.099 lbs) = **401 g (0.88 lbs)**

115 birds out of 197 weighed are within the weight range that is +/- 10% of the average body-weight **(401 - 491 g) (0.88 - 1.08 lbs)**

- 115 birds / 197 birds = 0.58
- Uniformity is therefore **58%**

NEXT

GRADING USING UNIFORMITY

No grading required

GRADING USING CV%

CV% - Do you have fixed or adjustable penning?

- Fixed Penning: the pens are fixed in place at the start of the flock. Pens will be divided across the house and the graded birds will need to be split across the available pens.

- Adjustable / Flexible Penning: the pen sizes can be changed to fit the requirements of the graded birds.

FIXED

ADJUSTABLE

GRADING USING CV%

CV% - Do you have fixed or adjustable penning?

- Fixed Penning: the pens are fixed in place at the start of the flock. Pens will be divided across the house and the graded birds will need to be split across the available pens.

- Adjustable / Flexible Penning: the pen sizes can be changed to fit the requirements of the graded birds.

FIXED

ADJUSTABLE

GRADING USING CV%

CV% - Do you have fixed or adjustable penning?

- Fixed Penning: the pens are fixed in place at the start of the flock. Pens will be divided across the house and the graded birds will need to be split across the available pens.

- Adjustable / Flexible Penning: the pen sizes can be changed to fit the requirements of the graded birds.

FIXED **ADJUSTABLE**

GRADING USING CV%

Adjustable Penning, 3-way grade, 12 - 14 CV%

Flock Uniformity CV%	Percentage in each Population after Grading			
	2 or 3-way grade	Light (%)	Normal (%)	Heavy (%)
12-14	3-way grade	22-25	~70 (66-73)	5-9

- Beginning with the lightest body weight in the sample, count the number of birds recorded until approximately 22% to 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.446
DEVIATION:	0.06
C.V. (%):	13.5

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	12
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V. (%):	13.5

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
0.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Light Birds

NEXT

GRADING USING CV%

Adjustable Penning, 3-way grade, 12 - 14 CV%

- Beginning with the heaviest body weight in the sample, count the number of birds recorded until approximately 5% to 9% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the heavy birds - all birds with a body weight higher than this should be in the heavy pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.446
DEVIATION:	0.06
C.V. (%):	13.5

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
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0.500 to 0.519	12
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0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V. (%):	13.5

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
0.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Heavy Birds

NEXT

GRADING USING CV%

Adjustable Penning, 3-way grade, 12 - 14 CV%

➢ The average population will be all the birds in the range between the light cut off point and the heavy cut off point (66% to 73% of the birds).

CURRENT DATA METRIC

TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.446
DEVIATION:	0.06
C.V. (%):	13.5

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	12
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL

TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V. (%):	13.5

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
0.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Average Birds

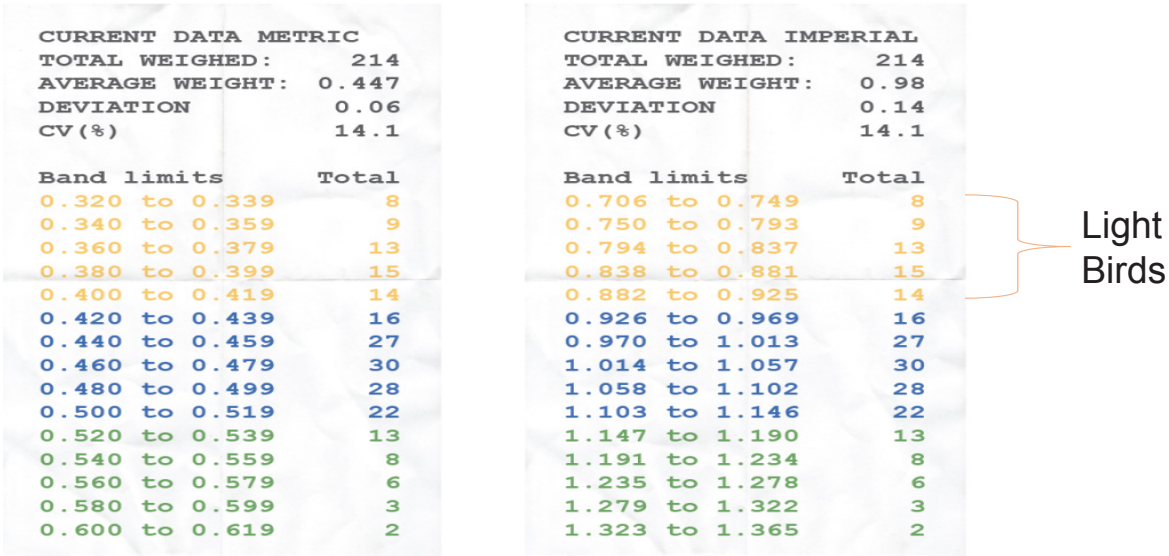
NEXT

GRADING USING CV%

Adjustable Penning, 3-way grade, > 14 CV%

Flock Uniformity CV%	Percentage in each Population after Grading			
	2 or 3-way grade	Light (%)	Normal (%)	Heavy (%)
>14	3-way grade	28-30	~58 (55-60)	12-15

- Beginning with the lightest body weight in the sample, count the number of birds recorded until approximately 28% to 30% of the total number weighed in the sample is reached.
- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.



CURRENT DATA METRIC

TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL

TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Light Birds

NEXT

GRADING USING CV%

Adjustable Penning, 3-way grade, > 14 CV%

- Beginning with the heaviest body weight in the sample, count the number of birds recorded until approximately 12% to 15% of the total number in the sample is reached.

- The body weight at this point is the cut off for the heavy birds - all birds with a body weight higher than this should be in the heavy pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Heavy Birds

NEXT

GRADING USING CV%

Adjustable Penning, 3-way grade, > 14 CV%

- The average population will be all the birds in the range between the light cut off point and the heavy cut off point (55% to 60% of the birds).

CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Average Birds

NEXT

GRADING USING CV%

Adjustable Penning, 2-way grade, 10 - 12% CV%

Flock Uniformity CV%	Percentage in each Population after Grading			
	2 or 3-way grade	Light (%)	Normal (%)	Heavy (%)
10-12	2-way grade	20	~80 (78-82)	0

- Beginning with the lightest body weight in the sample, count the number of birds recorded until approximately 20% of the total number weighed in the sample is reached.
- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	103
AVERAGE WEIGHT:	0.435
DEVIATION:	0.045
C.V. (%):	10.2

Band limits	Total
0.340 to 0.359	3
0.360 to 0.379	6
0.380 to 0.399	8
0.400 to 0.419	11
0.420 to 0.439	19
0.440 to 0.459	20
0.460 to 0.479	12
0.480 to 0.499	11
0.500 to 0.519	9
0.520 to 0.540	4

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	103
AVERAGE WEIGHT:	0.96
DEVIATION:	0.099
C.V. (%):	10.2

Band limits	Total
0.750 to 0.791	3
0.794 to 0.836	6
0.838 to 0.880	8
0.882 to 0.924	11
0.926 to 0.968	19
0.970 to 1.012	20
1.014 to 1.056	12
1.058 to 1.100	11
1.102 to 1.144	9
1.146 to 1.190	4

Light Birds

NEXT

GRADING USING CV%

Adjustable Penning, 2-way grade, 10 - 12% CV%

➢ The average population will be all the birds heavier than light cut off point (78% to 82% of the birds).

CURRENT DATA METRIC

TOTAL WEIGHED:	103
AVERAGE WEIGHT:	0.435
DEVIATION:	0.045
C.V. (%):	10.2

Band limits	Total
0.340 to 0.359	3
0.360 to 0.379	6
0.380 to 0.399	8
0.400 to 0.419	11
0.420 to 0.439	19
0.440 to 0.459	20
0.460 to 0.479	12
0.480 to 0.499	11
0.500 to 0.519	9
0.520 to 0.540	4

CURRENT DATA IMPERIAL

TOTAL WEIGHED:	103
AVERAGE WEIGHT:	0.96
DEVIATION:	0.099
C.V. (%):	10.2

Band limits	Total
0.750 to 0.791	3
0.794 to 0.836	6
0.838 to 0.880	8
0.882 to 0.924	11
0.926 to 0.968	19
0.970 to 1.012	20
1.014 to 1.056	12
1.058 to 1.100	11
1.102 to 1.144	9
1.146 to 1.190	4

Average Birds

NEXT

GRADING USING UNIFORMITY

Uniformity - Do you have fixed or adjustable penning?

- Fixed Penning: the pens are fixed in place at the start of the flock. Pens will be divided across the house and the graded birds will need to be split across the available pens.

- Adjustable / Flexible Penning: the pen sizes can be changed to fit the requirements of the graded birds.

FIXED

ADJUSTABLE

GRADING USING UNIFORMITY

Uniformity - Do you have fixed or adjustable penning?

- Fixed Penning: the pens are fixed in place at the start of the flock. Pens will be divided across the house and the graded birds will need to be split across the available pens.

- Adjustable / Flexible Penning: the pen sizes can be changed to fit the requirements of the graded birds.

FIXED

ADJUSTABLE

GRADING USING UNIFORMITY

Adjustable Penning, 3-way grade, < 65%

Uniformity	2 or 3-way Grade
65% or lower	3-way grade

- Calculate 10% of average sample weight (0.1 x average sample weight).
  0.1 x 446 g (0.98 lbs) = 45 g (0.099 lbs)

- Subtract this from the average sample weight.
  446 - 45 g (0.98 - 0.099 lbs) = 401 g (0.88 lbs)

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

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TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.446
Band limits	**Total**
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
Band limits	**Total**
0.705 to 0.747	4
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0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Light Birds

NEXT

GRADING USING UNIFORMITY

Adjustable Penning, 3-way grade, < 65%

- Calculate 10% of average sample weight (0.1 x average sample weight).
  0.1 x 446 g (0.98 lbs) = 45 g (0.099 lbs)

- Add this to the average sample weight.
  446 + 45 g (0.98 + 0.099 lbs) = 491 g (1.08 lbs)

- The body weight at this point is the cut off for the heavier birds - all birds with a body weight heavier than this should be in the heavy pen.

CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.446

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
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AVERAGE WEIGHT: 0.98

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1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Heavy Birds

NEXT

GRADING USING UNIFORMITY

Adjustable Penning, 3-way grade, < 65%

➢ The average population will be all the birds with a weight between 10% above the average sample weight and 10% below the average sample weight.

CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.446

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.98

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	14
0.926 to 0.968	16
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Average Birds

NEXT

GRADING USING UNIFORMITY

Adjustable Penning, 2-way grade, 65 - 80%

Uniformity	2 or 3-way Grade
65%-80%	2-way grade

- Calculate 10% of the average sample weight (0.1 x average sample weight).
  0.1 x 446 g (0.98 lbs) = 45 g (0.099 lbs)

- Subtract this from the average sample weight.
  446 - 45 g (0.98 - 0.099 lbs) = 401 g (0.88 lbs)

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

CURRENT DATA METRIC
TOTAL WEIGHED: 201
AVERAGE WEIGHT: 0.449

Band limits	Total
0.340 to 0.359	5
0.360 to 0.379	9
0.380 to 0.399	11
0.400 to 0.419	14
0.420 to 0.439	27
0.440 to 0.459	29
0.460 to 0.479	34
0.480 to 0.499	29
0.500 to 0.519	26
0.520 to 0.539	12
0.540 to 0.559	5

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 201
AVERAGE WEIGHT: 0.99

Band limits	Total
0.750 to 0.793	5
0.794 to 0.837	9
0.838 to 0.881	11
0.882 to 0.925	14
0.926 to 0.969	27
0.970 to 1.013	29
1.014 to 1.057	34
1.058 to 1.102	29
1.103 to 1.146	26
1.147 to 1.190	12
1.191 to 1.234	5

Light Birds

NEXT

GRADING USING UNIFORMITY

Adjustable Penning, 2-way grade, 65 - 80%

➢ The average population will be the birds with a body weight heavier than the light birds cut off point.

CURRENT DATA METRIC
TOTAL WEIGHED: 201
AVERAGE WEIGHT: 0.449

Band limits	Total
0.340 to 0.359	5
0.360 to 0.379	9
0.380 to 0.399	11
0.400 to 0.419	14
0.420 to 0.439	27
0.440 to 0.459	29
0.460 to 0.479	34
0.480 to 0.499	29
0.500 to 0.519	26
0.520 to 0.539	12
0.540 to 0.559	5

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 201
AVERAGE WEIGHT: 0.99

Band limits	Total
0.750 to 0.793	5
0.794 to 0.837	9
0.838 to 0.881	11
0.882 to 0.925	14
0.926 to 0.969	27
0.970 to 1.013	29
1.014 to 1.057	34
1.058 to 1.102	29
1.103 to 1.146	26
1.147 to 1.190	12
1.191 to 1.234	5

Average Birds

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, 12 - 14 CV%

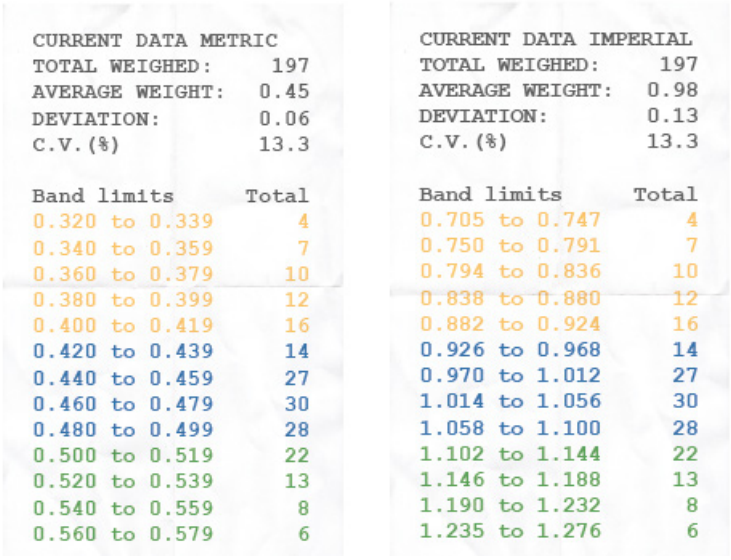
Flock Uniformity CV%	2 or 3-way Grade
12-14	3-way grade

- The number of dimensions of the fixed pens available must be considered when determining the cut off points.

- Most typical arrangement has 4 pens of equal size available.

The flock should be divided amongst the 4 pens:

- 25% Lightest Birds Pen 1
- 25% Average Birds Pen 2
- 25% Average Birds Pen 3
- 25% Heaviest Birds Pen 4



CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.45
DEVIATION:	0.06
C.V.(%)	13.3

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V.(%)	13.3

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	16
0.926 to 0.968	14
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, 12 - 14 CV%

- Beginning with the lightest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.45
DEVIATION:	0.06
C.V.(%)	13.3

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V.(%)	13.3

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	16
0.926 to 0.968	14
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Light Birds

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, 12 - 14 CV%

- Beginning with the heaviest body weight in the sample, count down the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the heavy birds - all birds with a body weight higher than this should be in the heavy pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.45
DEVIATION:	0.06
C.V.(%)	13.3

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V.(%)	13.3

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	16
0.926 to 0.968	14
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Heavy Birds

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, 12 - 14 CV%

- The average population will be all the birds in the range between the light cut off point and the heavy cut off point.
- These birds must be split equally between the remaining two pens (25% in each pen).

CURRENT DATA METRIC	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.45
DEVIATION:	0.06
C.V.(%)	13.3

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	197
AVERAGE WEIGHT:	0.98
DEVIATION:	0.13
C.V.(%)	13.3

Band limits	Total	
0.705 to 0.747	4	
0.750 to 0.791	7	
0.794 to 0.836	10	
0.838 to 0.880	12	
0.882 to 0.924	16	
0.926 to 0.968	14	Average Birds
0.970 to 1.012	27	
1.014 to 1.056	30	
1.058 to 1.100	28	
1.102 to 1.144	22	
1.146 to 1.188	13	
1.190 to 1.232	8	
1.235 to 1.276	6	

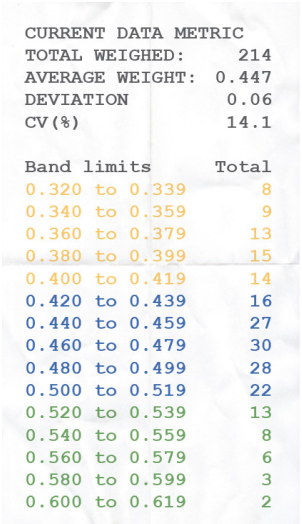
NEXT

GRADING USING CV%

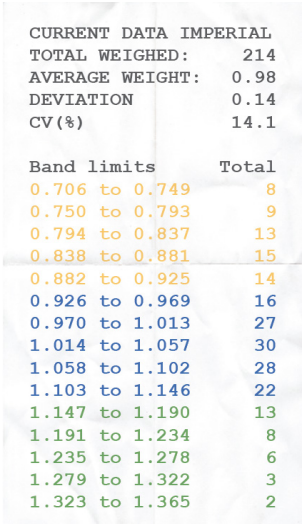
Fixed Penning, 3-way grade, > 14 CV%

Flock Uniformity CV%	2 or 3-way Grade
>14	3-way grade

- The number and dimensions of the fixed pens available must be considered when determining the cut off points.
- Most typical arrangement has 4 pens of equal size available.
- The flock should be divided amongst the 4 pens:
  - 25% Light Birds Pen 1
  - 25% Average Birds Pen 2
  - 25% Average Birds Pen 3
  - 25% Heavy Birds Pen 4



CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1
Band limits	**Total**
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2



CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1
Band limits	**Total**
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, > 14 CV%

- Beginning with the lightest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Light Birds

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, > 14 CV%

- Beginning with the heaviest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the heavy birds - all birds with a body weight higher than this should be in the heavy pen.

CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Heavy Birds

NEXT

GRADING USING CV%

Fixed Penning, 3-way grade, > 14 CV%

- The average population will be all the birds in the range between the light cut off point and the heavy cut off point.
- These birds must be split annually between the remaining two pens (25% in each pen).

CURRENT DATA METRIC	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.447
DEVIATION	0.06
CV(%)	14.1

Band limits	Total
0.320 to 0.339	8
0.340 to 0.359	9
0.360 to 0.379	13
0.380 to 0.399	15
0.400 to 0.419	14
0.420 to 0.439	16
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6
0.580 to 0.599	3
0.600 to 0.619	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	214
AVERAGE WEIGHT:	0.98
DEVIATION	0.14
CV(%)	14.1

Band limits	Total
0.706 to 0.749	8
0.750 to 0.793	9
0.794 to 0.837	13
0.838 to 0.881	15
0.882 to 0.925	14
0.926 to 0.969	16
0.970 to 1.013	27
1.014 to 1.057	30
1.058 to 1.102	28
1.103 to 1.146	22
1.147 to 1.190	13
1.191 to 1.234	8
1.235 to 1.278	6
1.279 to 1.322	3
1.323 to 1.365	2

Average Birds

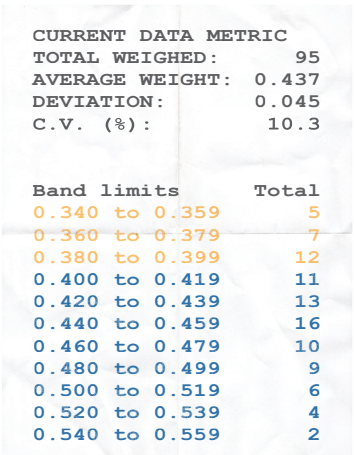
NEXT

GRADING USING CV%

Fixed Penning, 2-way grade, 10 - 12 CV%

Flock Uniformity CV%	2 or 3-way Grade
10-12	2-way grade

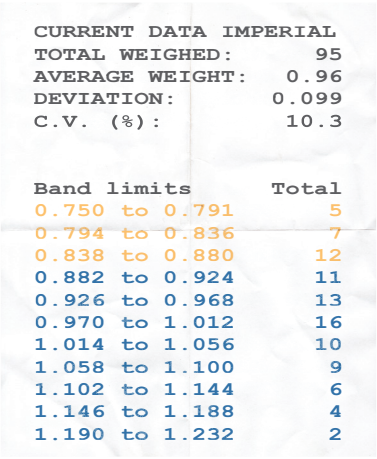
- The number and dimensions of the fixed pens available must be considered when determining the cut off points.
- Most typical arrangement has 4 pens of equal size available.
- The flock should be divided amongst the 4 pens:
  - 25% Light Birds Pen 1
  - 25% Average Birds Pen 2
  - 25% Average Birds Pen 3
  - 25% Heavy Birds Pen 4



CURRENT DATA METRIC

TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.437
DEVIATION:	0.045
C.V. (%):	10.3

Band limits	Total
0.340 to 0.359	5
0.360 to 0.379	7
0.380 to 0.399	12
0.400 to 0.419	11
0.420 to 0.439	13
0.440 to 0.459	16
0.460 to 0.479	10
0.480 to 0.499	9
0.500 to 0.519	6
0.520 to 0.539	4
0.540 to 0.559	2



CURRENT DATA IMPERIAL

TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.96
DEVIATION:	0.099
C.V. (%):	10.3

Band limits	Total
0.750 to 0.791	5
0.794 to 0.836	7
0.838 to 0.880	12
0.882 to 0.924	11
0.926 to 0.968	13
0.970 to 1.012	16
1.014 to 1.056	10
1.058 to 1.100	9
1.102 to 1.144	6
1.146 to 1.188	4
1.190 to 1.232	2

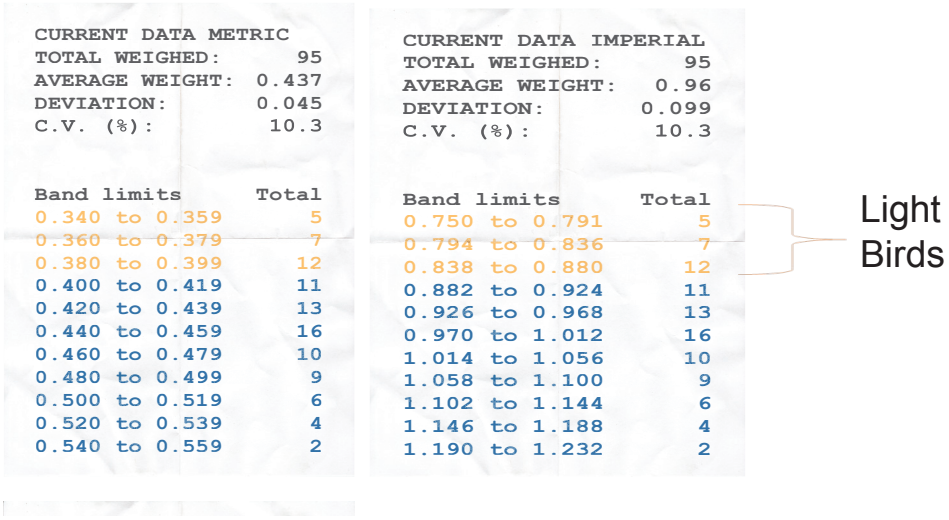
NEXT

GRADING USING CV%

Fixed Penning, 2-way grade, 10 - 12 CV%

- Beginning with the lightest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is cut off for the light birds - all birds with a body weight lower than this should be in the light pen.



CURRENT DATA METRIC	
TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.437
DEVIATION:	0.045
C.V. (%):	10.3

Band limits	Total
0.340 to 0.359	5
0.360 to 0.379	7
0.380 to 0.399	12
0.400 to 0.419	11
0.420 to 0.439	13
0.440 to 0.459	16
0.460 to 0.479	10
0.480 to 0.499	9
0.500 to 0.519	6
0.520 to 0.539	4
0.540 to 0.559	2

CURRENT DATA IMPERIAL	
TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.96
DEVIATION:	0.099
C.V. (%):	10.3

Band limits	Total
0.750 to 0.791	5
0.794 to 0.836	7
0.838 to 0.880	12
0.882 to 0.924	11
0.926 to 0.968	13
0.970 to 1.012	16
1.014 to 1.056	10
1.058 to 1.100	9
1.102 to 1.144	6
1.146 to 1.188	4
1.190 to 1.232	2

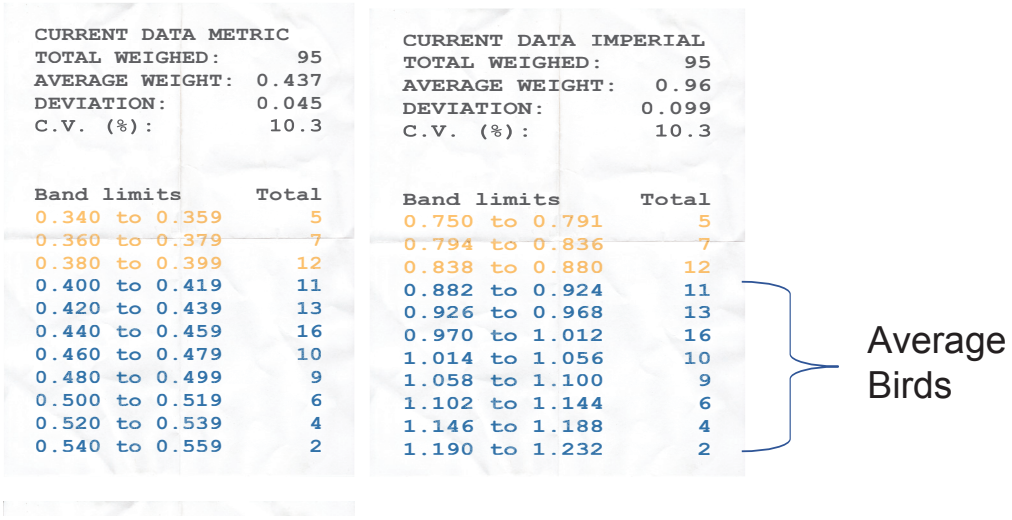
Light Birds

NEXT

GRADING USING CV%

Fixed Penning, 2-way grade, 10 - 12 CV%

- The average population will be all birds heavier than the light cut off point.
- These birds must be split equally between the remaining three pens (25% in each pen).



CURRENT DATA METRIC

TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.437
DEVIATION:	0.045
C.V. (%):	10.3

Band limits	Total
0.340 to 0.359	5
0.360 to 0.379	7
0.380 to 0.399	12
0.400 to 0.419	11
0.420 to 0.439	13
0.440 to 0.459	16
0.460 to 0.479	10
0.480 to 0.499	9
0.500 to 0.519	6
0.520 to 0.539	4
0.540 to 0.559	2

CURRENT DATA IMPERIAL

TOTAL WEIGHED:	95
AVERAGE WEIGHT:	0.96
DEVIATION:	0.099
C.V. (%):	10.3

Band limits	Total
0.750 to 0.791	5
0.794 to 0.836	7
0.838 to 0.880	12
0.882 to 0.924	11
0.926 to 0.968	13
0.970 to 1.012	16
1.014 to 1.056	10
1.058 to 1.100	9
1.102 to 1.144	6
1.146 to 1.188	4
1.190 to 1.232	2

Average Birds

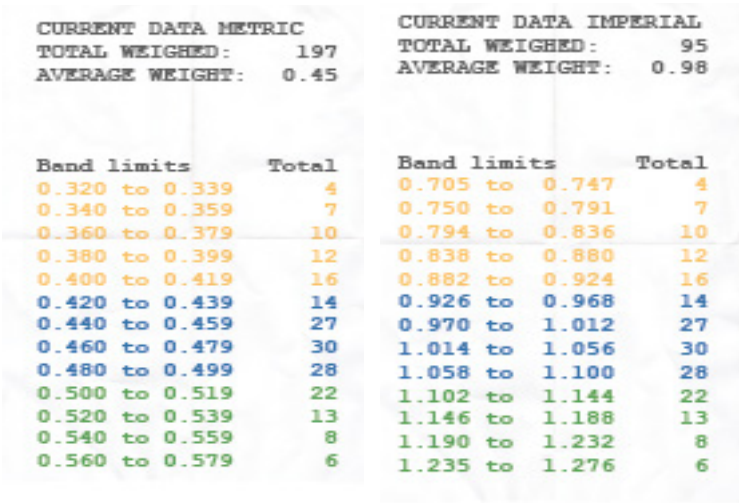
NEXT

GRADING USING UNIFORMITY

Fixed Penning, 3-way grade, < 65%

Uniformity	2 or 3-way Grade
65% or lower	3-way grade

- The number and dimensions of the fixed pens available must be considered when determining the cut off points.
- Most typical arrangement has 4 pens of equal size available.
- The flock should be divided amongst the 4 pens:
  - 25% Light Birds Pen 1
  - 25% Average Birds Pen 2
  - 25% Average Birds Pen 3
  - 25% Heavy Birds Pen 4



CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.45

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 95
AVERAGE WEIGHT: 0.98

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
0.794 to 0.836	10
0.838 to 0.880	12
0.882 to 0.924	16
0.926 to 0.968	14
0.970 to 1.012	27
1.014 to 1.056	30
1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

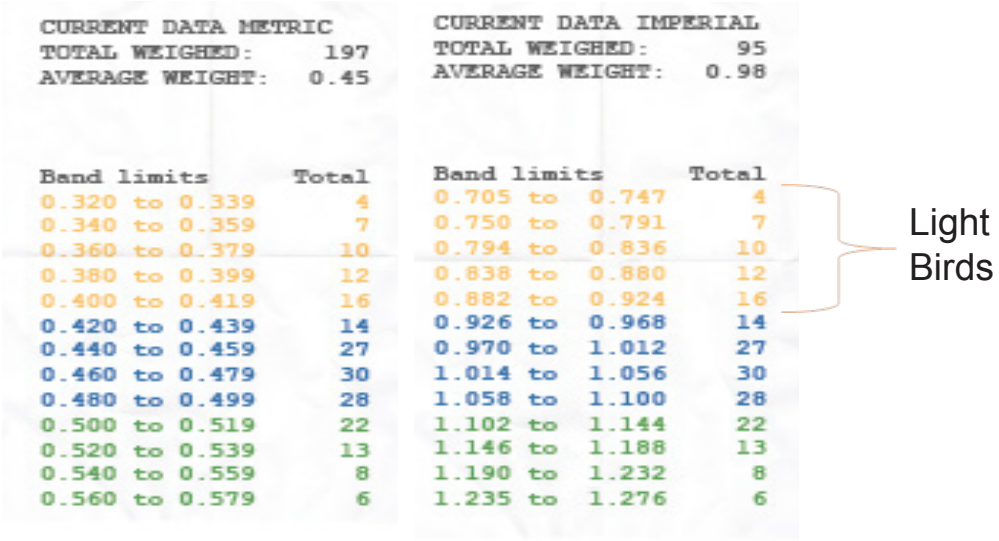
NEXT

GRADING USING UNIFORMITY

Fixed Penning, 3-way grade, < 65%

- Beginning with the lightest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.



CURRENT DATA METRIC
TOTAL WEIGHED: 197
AVERAGE WEIGHT: 0.45

Band limits	Total
0.320 to 0.339	4
0.340 to 0.359	7
0.360 to 0.379	10
0.380 to 0.399	12
0.400 to 0.419	16
0.420 to 0.439	14
0.440 to 0.459	27
0.460 to 0.479	30
0.480 to 0.499	28
0.500 to 0.519	22
0.520 to 0.539	13
0.540 to 0.559	8
0.560 to 0.579	6

CURRENT DATA IMPERIAL
TOTAL WEIGHED: 95
AVERAGE WEIGHT: 0.98

Band limits	Total
0.705 to 0.747	4
0.750 to 0.791	7
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0.838 to 0.880	12
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1.058 to 1.100	28
1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

Light Birds

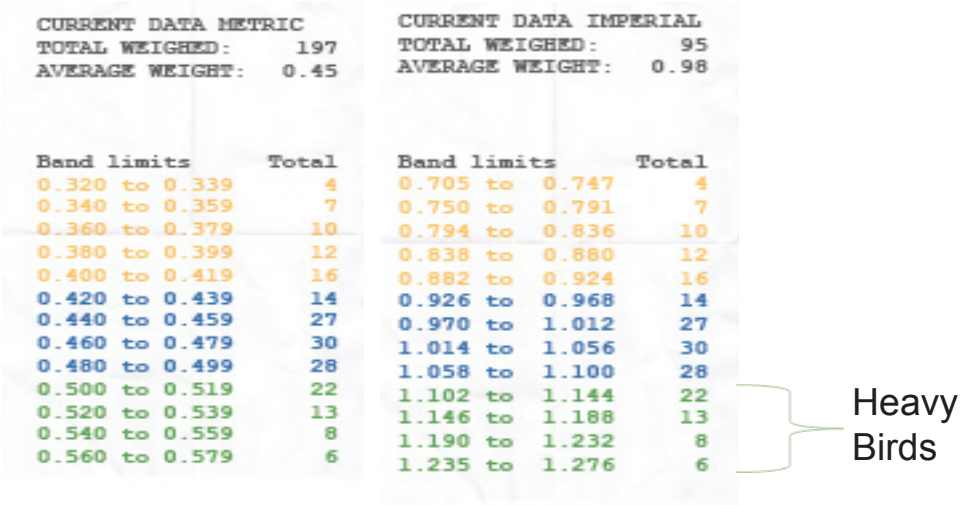
NEXT

GRADING USING UNIFORMITY

Fixed Penning, 3-way grade, < 65%

- Beginning with the heaviest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the heavy birds - all birds with a body weight higher than this should be in the heavy pen.



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1.102 to 1.144	22
1.146 to 1.188	13
1.190 to 1.232	8
1.235 to 1.276	6

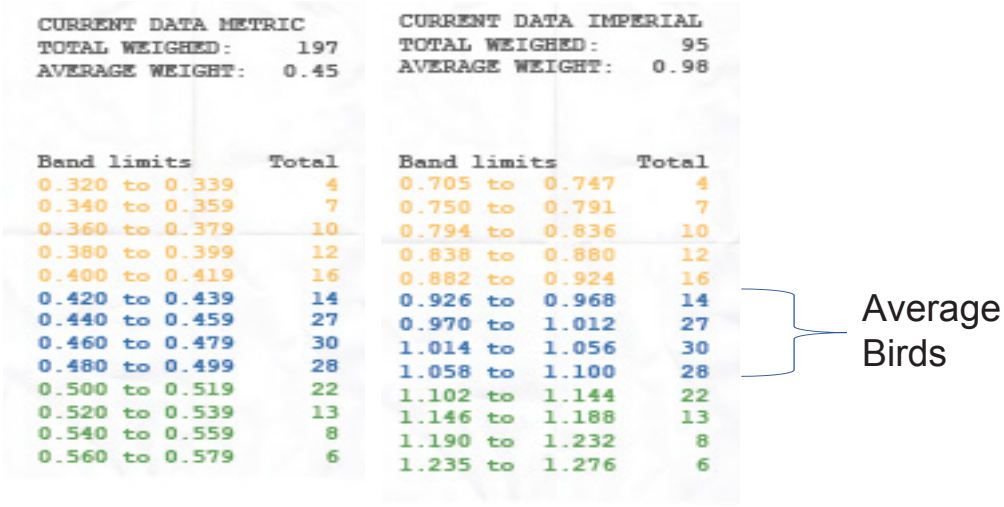
Heavy Birds

NEXT

GRADING USING UNIFORMITY

Fixed Penning, 3-way grade, < 65%

- The average population will be all the birds in the range between the light cut off point and the heavy cut off point.
- These birds must be split equally between the remaining two pens (25% in each pen).



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1.190 to 1.232	8
1.235 to 1.276	6

Average Birds

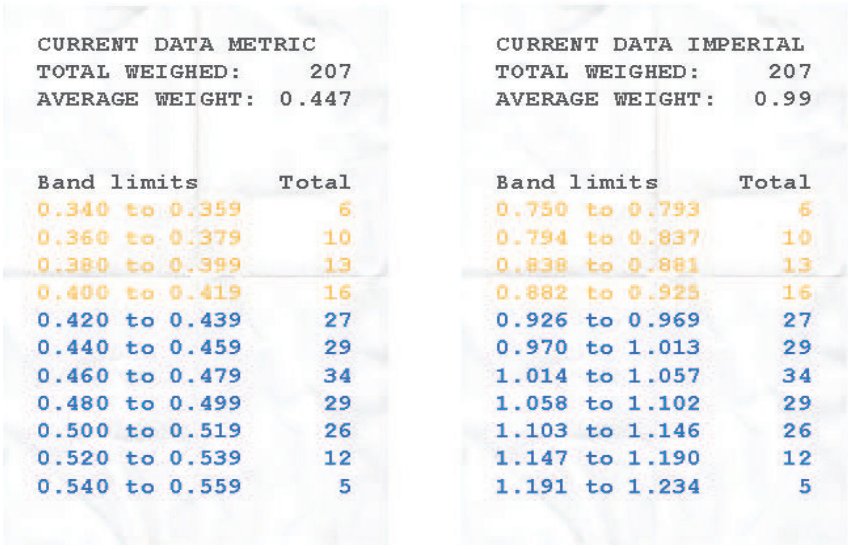
NEXT

GRADING USING UNIFORMITY

Fixed Penning, 2-way grade, 65 - 80%

Uniformity	2 or 3-way Grade
65%-80%	2-way grade

- The number and dimensions of the fixed pens available must be considered when determining the cut off points.
- Most typical arrangement has 4 pens of equal size available.
- The flock should be divided amongst the 4 pens:
  - 25% Light Birds Pen 1
  - 25% Average Birds Pen 2
  - 25% Average Birds Pen 3
  - 25% Average Birds Pen 4



CURRENT DATA METRIC
TOTAL WEIGHED: 207
AVERAGE WEIGHT: 0.447

Band limits	Total
0.340 to 0.359	6
0.360 to 0.379	10
0.380 to 0.399	13
0.400 to 0.419	16
0.420 to 0.439	27
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CURRENT DATA IMPERIAL
TOTAL WEIGHED: 207
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0.794 to 0.837	10
0.838 to 0.881	13
0.882 to 0.925	16
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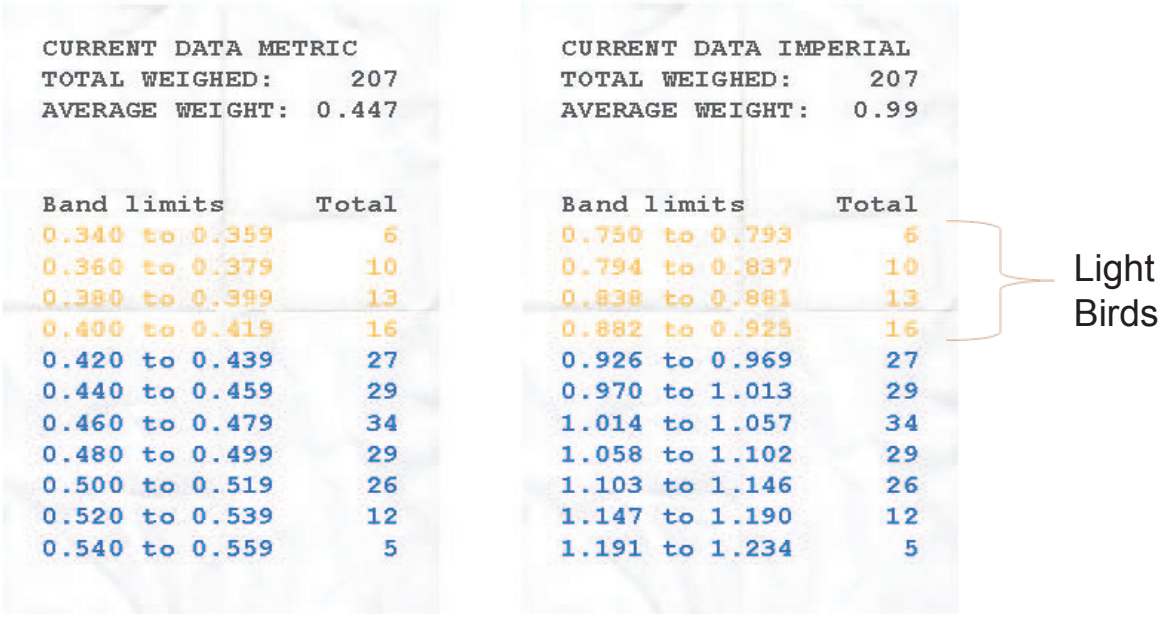
NEXT

GRADING USING UNIFORMITY

Fixed Penning, 2-way grade, 65 - 80%

- Beginning with the lightest body weight in the sample, count up the number of birds recorded until 25% of the total number weighed in the sample is reached.

- The body weight at this point is the cut off for the light birds - all birds with a body weight lower than this should be in the light pen.



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1.058 to 1.102	29
1.103 to 1.146	26
1.147 to 1.190	12
1.191 to 1.234	5

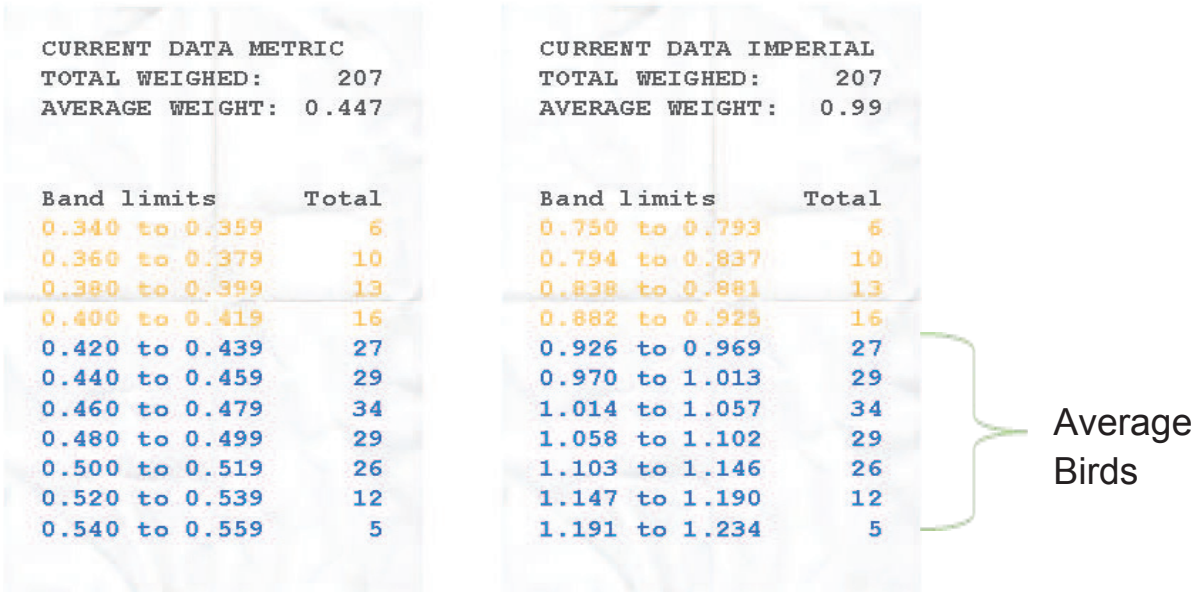
Light Birds

NEXT

GRADING USING UNIFORMITY

Fixed Penning, 2-way grade, 65 - 80%

- The average population will be all the birds heavier than the light cut off point.
- These birds must be split equally between the remaining three pens (25% in each pen).



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Average Birds

NEXT

PROBLEM SOLVING

Problem Solving

STOCKING DENSITY

FEEDING

DRINKER MANAGEMENT

LIGHTING

ENVIRONMENTAL CONDITIONS

PROBLEM SOLVING

Stocking Densities

Rearing 10-105 days (2-15 weeks)	
Males Birds/m^2 (ft^2/bird)	Females Birds/m^2 (ft^2/bird)
3-4 (2.7-3.6)	4-8 (1.4-2.7)

- Fixed pens: Adjust bird numbers within each pen to maintain the recommended stocking density for age.
- Adjustable pens: Increase or decrease pen area to maintain the recommended stocking density for age.

BACK TO PROBLEM SOLVING

PROBLEM SOLVING

Feeding Space Per Bird

MALES		
	Feeding Space	
Age (days)	Track Feeder cm (in)	Pan Feeder cm (in)
0-35 days	5 (2)	5 (2)
36-70 days	10 (4)	9 (3.5)
71-105 days	15 (6)	11 (4)

FEMALES		
	Feeding Space	
Age (days)	Track Feeder cm (in)	Pan Feeder cm (in)
0-35 days	5 (2)	4 (2)
36-70 days	10 (4)	8 (3)
71-105 days	15 (6)	10 (4)

➢ Where floor feeding is used the pen population size should be 1000 - 1500 birds. (This is dependent on the pen size and the spinner type)

NEXT

PROBLEM SOLVING

General Feeding Management

- Ensure recommended feed space per bird is maintained throughout the rearing period.
- Ensure feeder height is correct and adjusted for age.
- Distribute feed in the dark to allow instant access to feed when lights are turned back on.
- Ensure feed is distributed under 3 mins.
- Each graded population should have its own dedicated feeding system where possible to allow accurate feed amounts to be given. If not, then the whole house population should be fed to the lowest feed amount per bird (usually the heavy bird population) and any extra feed needed should be added by hand and evenly distributed between the feeders.

NEXT

Feeding (Pans)

- Ensure adequate distance between feeder pan centers (min 75 cm [29.5 in]).
- Ensure feed allocation settings per pan (feed volumes) are equal, to allow a uniform distribution of feed throughout the pen.
- Adjust number of pans in adjustable penning if bird numbers change.

NEXT

PROBLEM SOLVING

Feeding (Track)

- Adjust track length for any changes in birds per pen for adjustable penning.
- Ensure correct depth of feed to allow uniform feed distribution along whole length of track.

NEXT

Feeding (Floor Feeding)

- Ensure any spinners are calibrated correctly to allow correct amount of feed per bird.

- Litter depth should be no more than 4 cm (1.5 in).

- Only use pellets that are of good durability for floor feeding.
  - Pellet Durability Index should be greater than 85% after a 2 minute Holman test.
  - < 10% fine particles.
  - Pellet length 3 - 4 mm (0.12 - 0.16 in).

- Check floor area is covered uniformly with pellet to allow all birds to eat uniformly and that stocking densities within each pen are correct for age of birds.

BACK TO PROBLEM SOLVING

PROBLEM SOLVING

Drinker Management

Type of Drinker	Drinker Space
Bell drinkers	1.5 cm (0.6 in)
Nipples	8-12 birds/nipple
Cups	20-30 birds/cup

- All birds should have unrestricted access to water.
  - Recommended number of birds per nipple or round bell drinker should be adhered to.

- A minimum water to feed ratio of 1.6 - 2.0 litres of water to 1 kg of feed should be followed depending on house and external environmental temperatures.

NEXT

PROBLEM SOLVING

Drinker Management

- If pen sizes need to be adjusted for bird numbers, ensure bell drinker numbers are adjusted to maintain the correct number of birds per drinker.
- Ensure drinker heights are correct and adjusted for age.
- Ensure drinker flow rates are correct for the age of the birds.

Bird Age	Nipple Flow Rate (ml / min)
0 - 7 days	20
7 - 21 days	60 - 70
> 21 days	70 - 100

BACK TO PROBLEM SOLVING

Environmental Conditions

- Ensure environmental conditions in all graded pens are uniform through regular monitoring of:
  - Temperature
  - Relative Humidity
  - Ventilation Rate

- Ensure uniform airflow through all pens by having an equal number of inlets open per pen and uniform distribution of inlets throughout the house.

- Ensure the correct number of fans are operating to provide the appropriate air volume.

BACK TO PROBLEM SOLVING

PROBLEM SOLVING

Lighting

➢ Follow the appropriate lighting program for the rearing system being used:

1. Closed rearing house (controlled environment), and closed laying house (controlled environment).
2. Closed (controlled environment) or blackout rearing house, and open-sided (natural environment) laying house.
3. Open-sided rearing house (natural environment), and open-sided laying house (natural environment).

NEXT

PROBLEM SOLVING

Lighting

➢ Closed rearing house (controlled environment), and closed laying house (controlled environment).

AGE (Days)		DAYLENGTH For Flocks with Different CV% at 140 Days (20 Weeks)		LIGHT INTENSITY
		BROODING DAYLENGTHS* (Hours)		
		CV 10% or Less (70% Uniformity or Greater)	CV 10% or Greater (70% Uniformity or Less)	
1		23	23	80-100 lux (7-9 fc) in brooding area. 10-20 lux (1-2 fc) in the house.
2		23	23	
3		19	19	
4		16	16	
5		14	14	
6		12	12	30-60 lux (3-6 fc) in the brooding area. 10-20 lux (1-2 fc) in the house.
7		11	11	
8		10	10	
9		9	9	
AGE (Days)		REARING DAYLENGTHS (Hours)		
10-147		8	8	10-20 lux (1-2 fc).
Days	Weeks	LAYING DAYLENGTHS (Hours)		
147	21	11‡	8	30-60 lux (3-6 fc).
154	22	12‡	12‡	
161	23	13‡	13‡	
168	24	13‡	13‡	
175	25	13	13	

*Constant 8 hour day lengths should be reached by 10 days of age. However, if problems have regularly occurred with early body weight gain, the reduction to a constant day length may be more gradual so that 8 hours is not reached until 21 days.

NEXT

PROBLEM SOLVING

Lighting

➢ Closed (controlled environment) or blackout rearing house, and open-sided (natural environment) laying house.

	NATURAL DAYLENGTH (Hours) at 147 Days (21 Weeks)							LIGHT INTENSITY
	9	10	11	12	13	14	15	
Age (Days)	BROODING DAYLENGTH (Hours) ‡							
1	23	23	23	23	23	23	23	80-100 lux (7-9 fc) in brooding area. 10-20 lux (1-2 fc) in house.
2	23	23	23	23	23	23	23	
3	19	19	19	19	19	19	19	
4	16	16	16	16	16	16	16	
5	14	14	14	14	14	14	14	
6	12	12	12	12	12	12	12	60-80 lux (6-7 fc) in brooding area. 10-20 lux (1-2 fc) in house.
7	11	11	11	11	11	11	11	
8	10	10	10	10	10	10	11	
9	9	9	9	9	10	10	10	
Age (Days)	REARING DAYLENGTH (Hours)							
10-146	8	8	8	8	9	9	9	10-20 lux (1-2 fc).
Age: Days / Weeks	LAYING DAYLENGTH (Hours) ¶							
147 / 21	12#	12#	12#	13#	14	14	15§	Artificial lighting 30-60 lux (3-6 fc).
154 / 22	13#	13 #	13#	13#	14	14	15§	
161 / 23	14	14	14	14	14	14	15§	

‡ Day length may be increased abruptly in a single increment without adversely affecting total egg production (although peak may be higher and persistency slightly poorer) provided the body weights are on target and the flock is uniform (CV% ≤ 10 or ≥ 70% uniformity).

NEXT

PROBLEM SOLVING

Lighting

➢ Open-sided rearing house (natural environment), and open-sided laying house (natural environment).

	NATURAL DAYLENGTH At 10 Days (Hours)							LIGHT INTENSITY
	9	10	11	12	13	14	15	
Age (Days)	BROODING DAYLENGTH (Hours)							
1	23	23	23	23	23	23	23	80-100 lux (7-9 fc) in brooding area.
2	23	23	23	23	23	23	23	
3	19	19	19	19	19	19	19	
4	16	16	16	16	16	16	16	
5	14	14	14	14	14	14	15	
6	12	12	12	12	13	14	15	> 60-80 lux (6-7 fc) in brooding area.
7	11	11	11	12	13	14	15	
8	10	10	11	12	13	14	15	
9	9	10	11	12	13	14	15	
Age (Days)	REARING DAYLENGTH							
10-146 days	Natural lighting							Natural light intensity.
	NATURAL DAYLENGTH (Hours) at 147 Days (21 Weeks)							
	9	10	11	12	13	14	15	
Age: Days / Weeks	LAYING DAYLENGTH (Hours)							
147 / 21	12#	13#	14	14	14	14	15§	Supplementary artificial lighting 30-60 lux (3-6 fc), but 60 lux (6 fc) for spring-hatched flocks.
154 / 22	13#	14	14	14	14	14	15§	
161 / 23	14	14	14	14	14	14	15§	

NEXT

PROBLEM SOLVING

Lighting

➢ Intensity

- Ensure all light bulbs are positioned uniformly around the house.
- Ensure all light bulbs are set at an equal and uniform distance from the floor.
- Ensure all bulbs are in good working order, are clean and emit the same level of intensity.
- Avoid the use of unidirectional light bulbs (old style LED bulbs or spot lights).
- Avoid the use of low intensity (high flicker rate) fluorescent tubes.

NEXT

Lighting

➢ Measurements

- Light intensity should be measured at 9 or 10 locations and include under and between lights to ensure uniform light is provided throughout the house.

BACK TO PROBLEM SOLVING

POST GRADING

Post Grading

- Once movement of birds into each grading pen has been completed according to recommended calculated numbers / percentages and cut off points, an adjustment to bird numbers per pen can be made (if needed), to achieve the correct stocking densities according to actual pen sizes.

- This bird movement should be carried out in the correct way with the birds chosen to be moved being of a similar weight to the average bird weight in the receiving pen (i.e. if moving from the light pen to the average pen, the heaviest of the light birds should be chosen).

NEXT

POST GRADING

Re-weighing Populations After Grading

- After grading it is important to re-weigh a sample of birds from each pen or population (a minimum of 2% or 50 birds whichever is greater) and establish the average body weight, the variation around that average as measured by CV% or uniformity and number of birds for each graded pen.

CONTENTS

POST GRADING PRACTICES

Post Grading Practices

< 63 DAYS

63 -105 DAYS

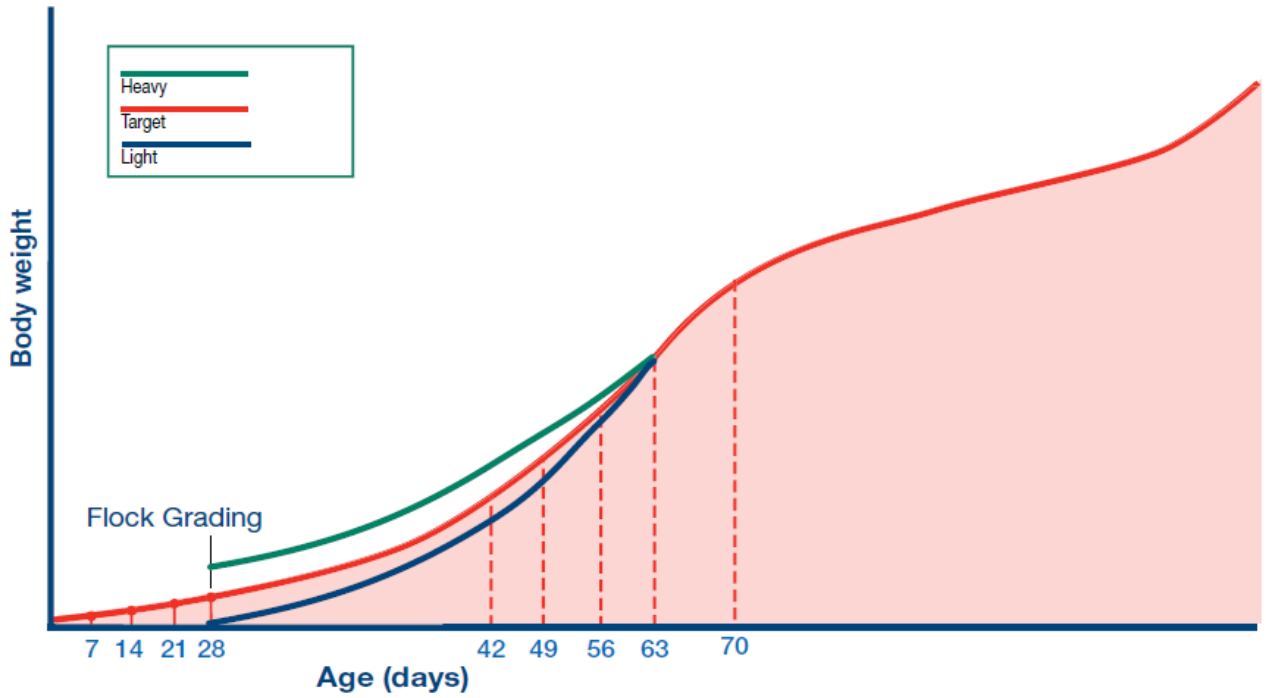
> 105 DAYS

POST GRADING PRACTICES

Grading Practices (< 63 days)

- For each graded population, the aim is to achieve the target body weight gradually and uniformly within the period during which skeletal development is taking place (i.e. before 63 days of age).

- After 28 days of age the weekly body weights of each population must continue to be monitored and feed allocations adjusted as necessary to allow the required body weight targets to be met.

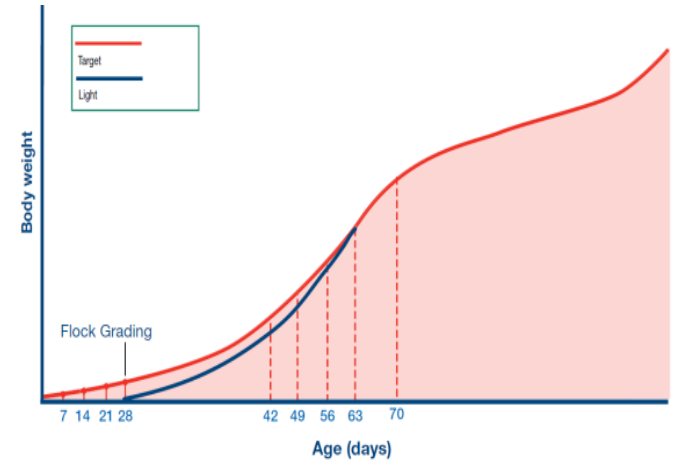


NEXT

POST GRADING PRACTICES

Light Birds (< 63 days)

- Where the average body weight after grading for a population / pen is below target by more than 100 g (0.22 lbs), re-draw the body weight curve so that target body weight is achieved by 63 days.
- For the first week after grading, the 'light' population should be held on the same feeding volume as that prior to grading (i.e. do not increase feed levels).
- Body weight will be increased due to the reduced competition from the larger birds.
- Future increases in feed should be based on the deviation from target body weight.

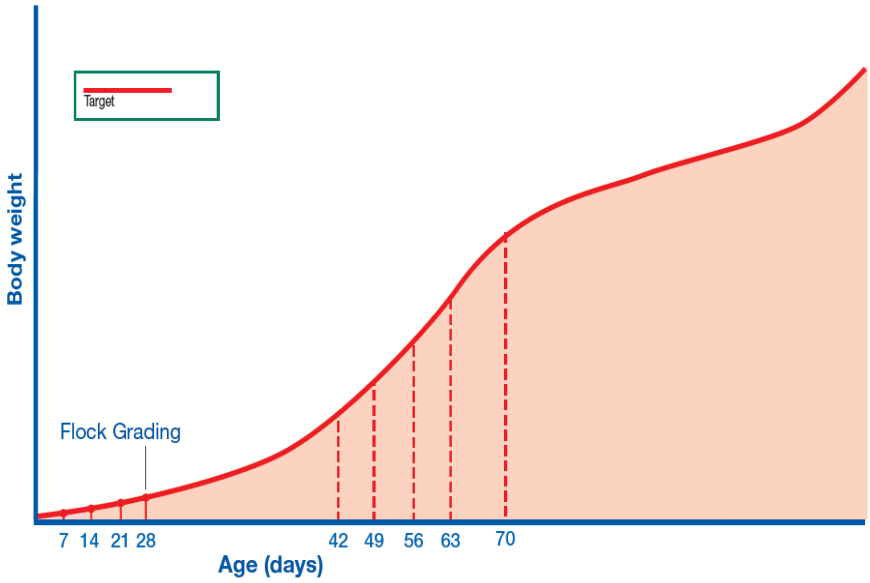


NEXT

POST GRADING PRACTICES

Average Birds (< 63 days)

- Keep birds on target body weight.
- Continue to feed birds to maintain target body weight.



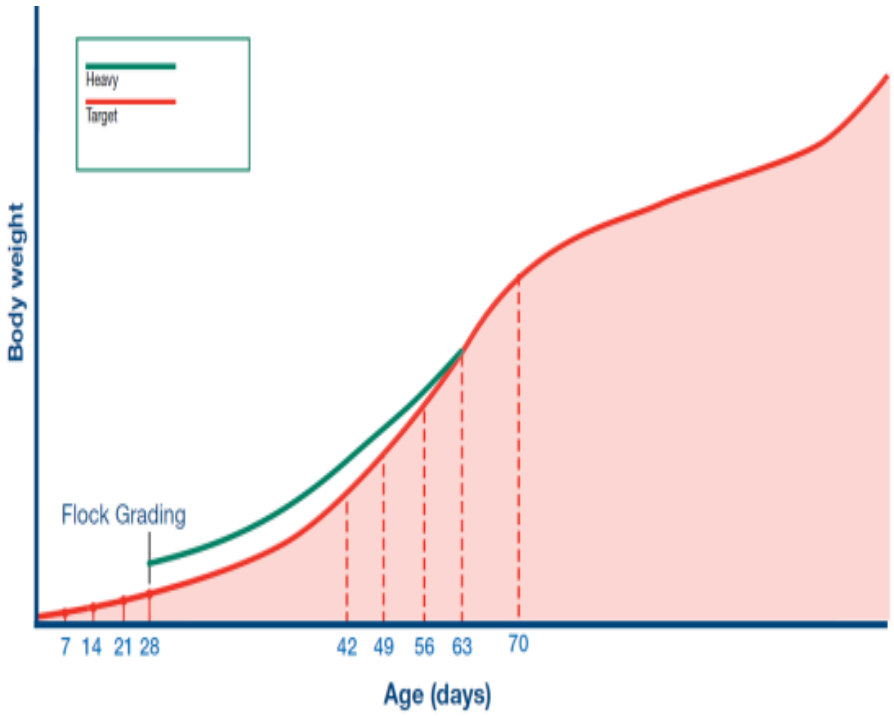
NEXT

POST GRADING PRACTICES

Heavy Birds (< 63 days)

- Where average body weight after grading is greater than 100 g (0.22 lbs) over the target body weight re-draw the body weight curve to reduce growth so that birds are gradually brought back onto target by 63 days.

- Feed levels should never be reduced but it may be necessary to reduce the next feed increment or delay the next feed increase in order to achieve the target body weight.

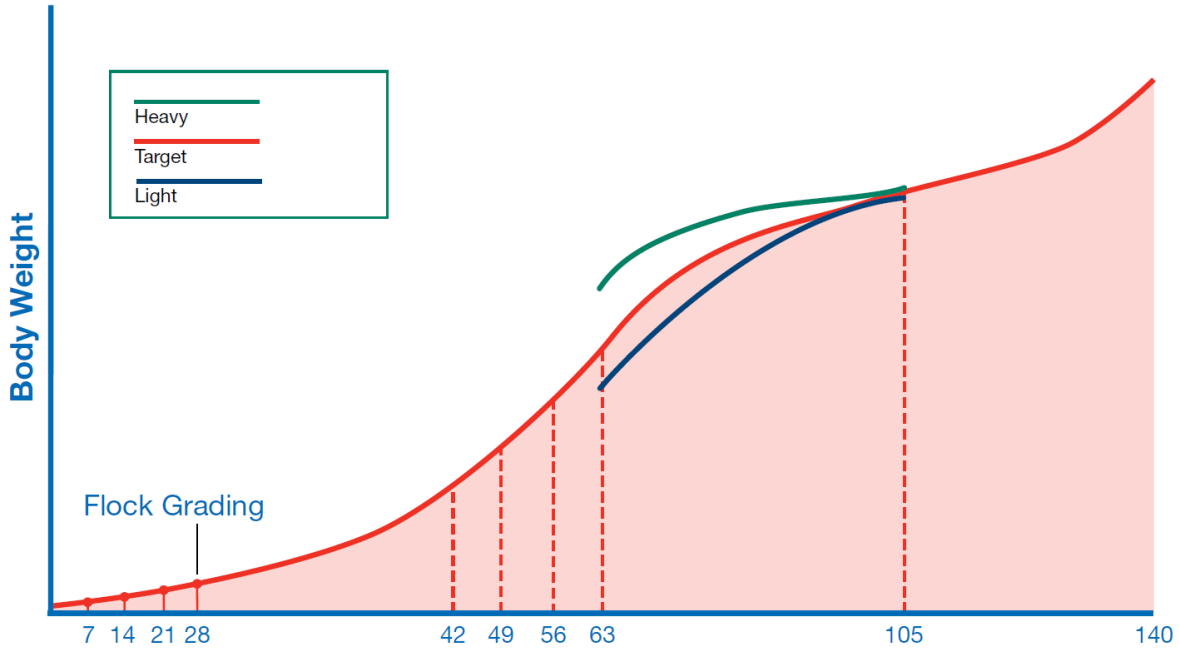


BACK TO POST GRADING

POST GRADING PRACTICES

Grading Practices (63 to 105 days)

- At 63 days of age, the weight of the population in relation to the target should be re-assessed.
- Populations that are of similar weight and feed consumption can be combined at this age.



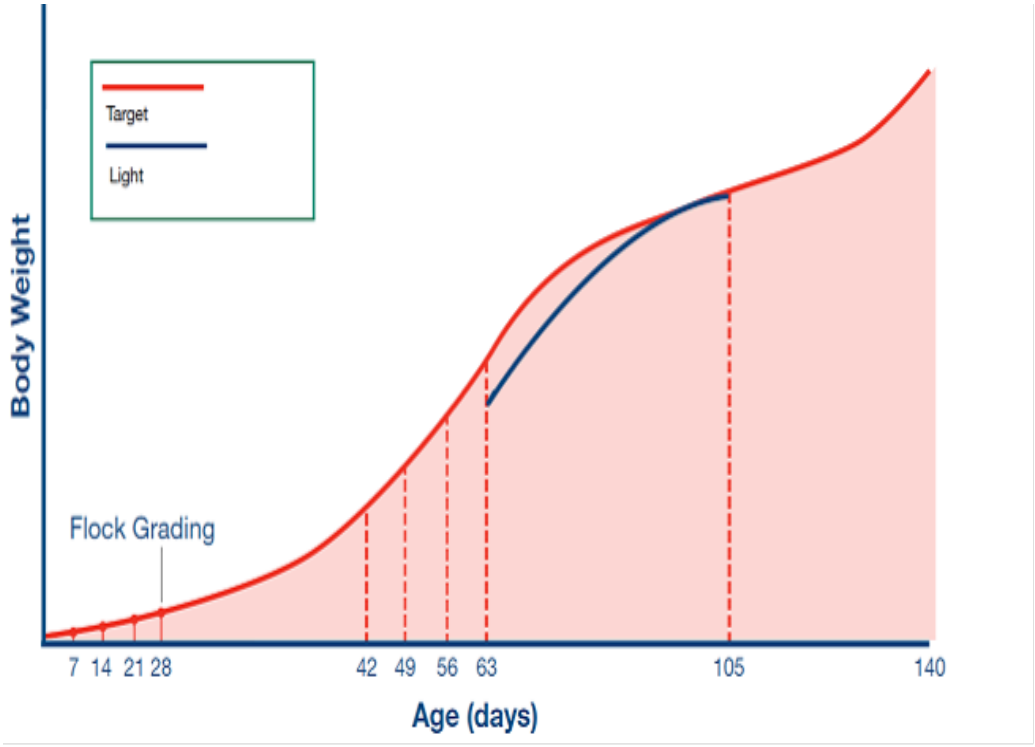
NEXT

POST GRADING PRACTICES

Light Birds (63 to 105 days)

- If birds remain under target at 63 days (9 weeks), the target should be re-drawn so that birds are brought back onto target profile gradually, achieving body weight by 105 days.

- Subsequent appropriate increases in feed should be based on the deviation from target body weight.

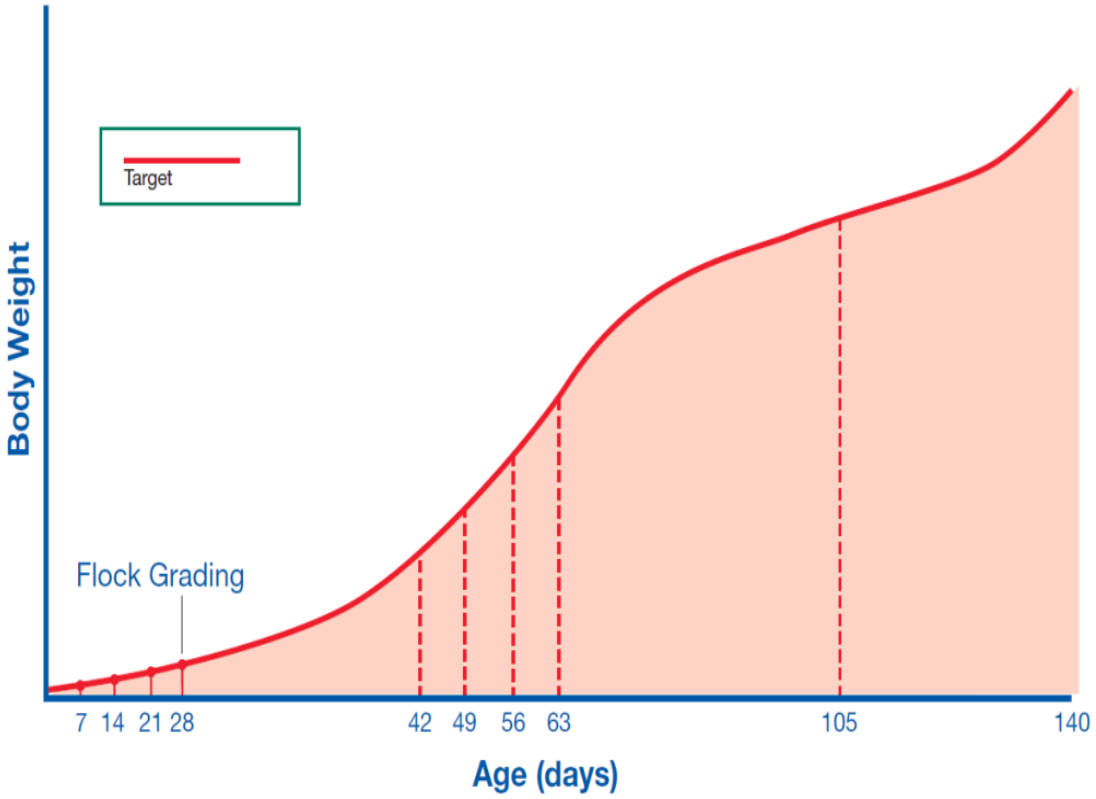


NEXT

POST GRADING PRACTICES

Average Birds (63 to 105 days)

- The aim is to continue to keep birds on target body weight.
- Continue to feed birds to maintain target body weight.



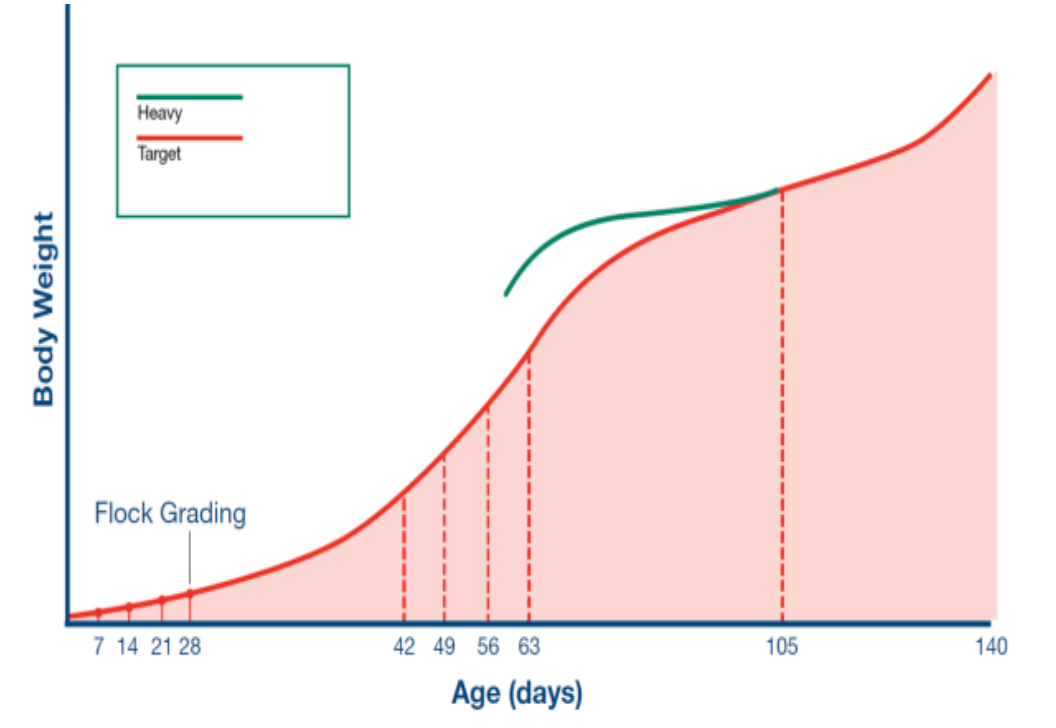
NEXT

POST GRADING PRACTICES

Heavy Birds (63 to 105 days)

- If birds remain overweight at 63 days (9 weeks of age), the target should be re-drawn so that birds are brought back onto target profile gradually, achieving body weight by 105 days.

- Feed levels should never be reduced but it may be necessary to reduce the next feed increment or delay the next feed increase in order to achieve the target body weight.



BACK TO POST GRADING

POST GRADING PRACTICES

Combining Populations

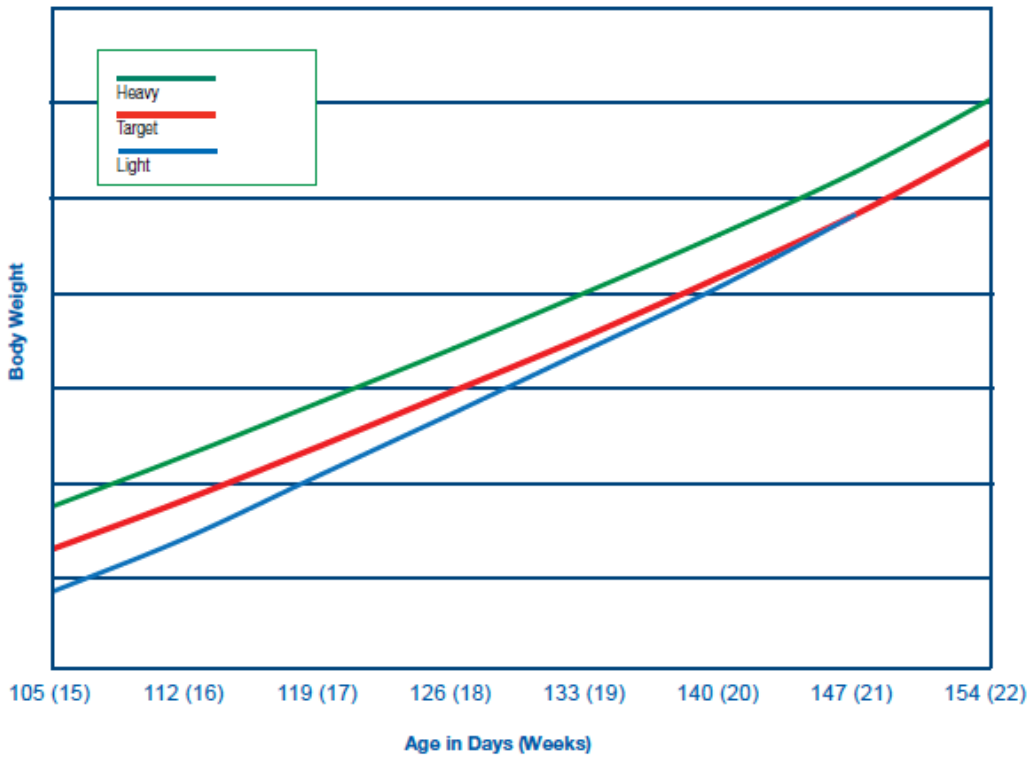
- Populations that are of similar weight and feed consumption can be combined.
- Weekly monitoring of body weight and CV% / uniformity should continue.
- Populations that are still variable at 105 days should not be combined and where possible housed separately on transfer to the production house.

BACK TO POST GRADING

POST GRADING PRACTICES

Re-drawing Body Weight Profiles (> 105 days)

- Populations that are still variable at 105 days should not be combined and where possible house separately on transfer to the production house.

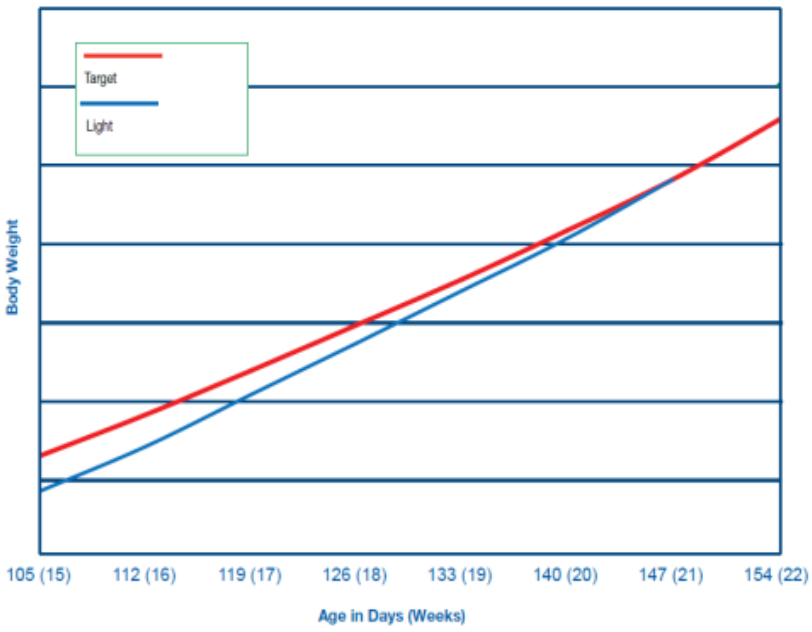


NEXT

POST GRADING PRACTICES

Light Birds (> 105 days)

- If birds remain under weight at 105 days (15 weeks of age), the target should be re-drawn so that birds are brought back onto target profile gradually, achieving body weight by POL.
- Subsequent appropriate increases in feed should be based on the deviation from target body weight.
- Light birds should not be combined with Average or Heavy birds.
- Light stimulation should be delayed.

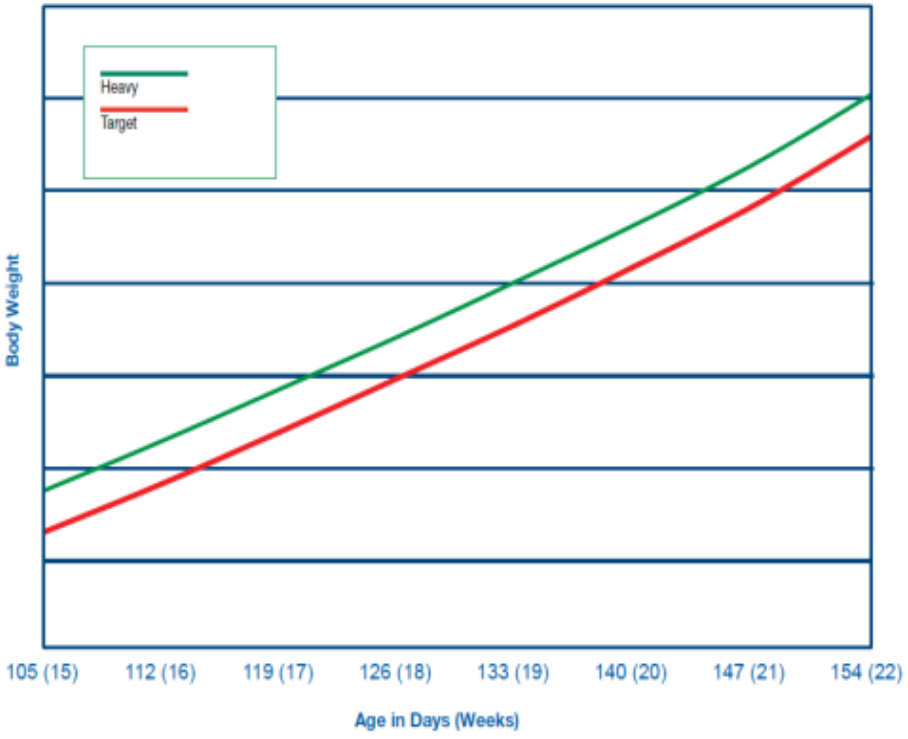


NEXT

POST GRADING PRACTICES

Heavy Birds (> 105 days)

➢ If birds remain overweight at 105 days (15 weeks of age) a new target should be re-drawn parallel to the original target through to depletion.



BACK TO POST GRADING