

# Girrick – Nutrient Balance



# Farmgate Nutrient Balance



- The farmgate nutrient balance is calculated from farm information for a 12 month period
- For Girrick, we assessed November 2016 to October 2017 (Harvest 2017)
- Used PLANET Scotland software (does all the calculations for you)!
- Start with basic farm and cropping details (e.g. mixed farm with arable, beef and sheep) and broad breakdown of cropping/grassland areas

# Imports



- Need to provide information on imports coming onto the farm:
  - Livestock
  - Animal Feeds
  - Bedding
  - Organic Manures
  - Inorganic Fertiliser

# Livestock



Farm and Cropping Details				
Imports				
Exports				
Nutrient Balance				
Livestock Imports				
Animal Feeds Imports				
Bedding Imports				
Organic Manures Imports				
Inorganic Fertilisers Imports				
Livestock group	Livestock unit	Weight kg	Number of units	
*				
▶ Cattle	1 bull breeding, 25 months and over	800	1	



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



Scottish Government  
Riaghaltas na h-Alba  
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# Animal Feeds



Farm and Cropping Details										
Imports										
Exports										
Nutrient Balance										
Livestock Imports										
Animal Feeds Imports										
Bedding Imports										
Organic Manures Imports										
Inorganic Fertilisers Imports										
Set new defaults										
Animal feeds group	Animal feeds type	DM %	Crude protein % in fresh wt	Phosphorus (P) % in DM	Potassium (K) % in DM	Purchases t fresh wt	Stock at year-start t fresh wt	Stock at year-end t fresh wt	Used t fresh wt	
*										
▶	Compounds	Beef, calf (18% CP)	90	18.0	0.66	1.12	3.0			3.0
	Concentrates	Brewers and distillers grain, dry	90	21.4	0.50	0.06	57.0			57.0
	Compounds	Beef, grower (16% CP)	90	16.0	0.56	1.12	6.0			6.0



# Inorganic Fertiliser

Farm and Cropping Details										
Imports										
Exports										
Nutrient Balance										
Livestock Imports										
Animal Feeds Imports										
Bedding Imports										
Organic Manures Imports										
Inorganic Fertilisers Imports										
Set new defaults										
Name	Solid or liquid Tick if solid	N % or % w/v	P2O5 % or % w/v	K2O % or % w/v	Purchases t or m <sup>3</sup>	Stock at year-start t or m <sup>3</sup>	Stock at year-end t or m <sup>3</sup>	Applied to land t or m <sup>3</sup>		
*	<input checked="" type="checkbox"/>									
▶ Ammonium nitrate (34.5% N)	<input checked="" type="checkbox"/>	34.5	0.0	0.0	38.0		0.0	38.0		
Muriate of potash	<input checked="" type="checkbox"/>	0.0	0.0	60.0	23.0		0.0	23.0		
Triple superphosphate	<input checked="" type="checkbox"/>	0.0	47.0	0.0	22.0		0.0	22.0		
Urea	<input checked="" type="checkbox"/>	46.0	0.0	0.0	24.0		0.0	24.0		

# Exports



- The need to provide information on exports going off the farm:
  - Livestock Exports
  - Livestock Product Exports (eggs, milk, wool)
  - Harvested Crops Exports
  - Organic Manures Exports
  - Inorganic Fertiliser Exports

# Livestock



Farm and Cropping Details		Imports	Exports	Nutrient Balance	
Livestock Exports		Livestock Products Exports	Harvested Crops Exports	Organic Manures Exports	Inorganic Fertilisers Exports
Livestock group	Livestock unit	Weight kg	No. of units		
*					
▶	Sheep/other	1 lamb, 6-9 months	40	255	
	Sheep/other	1 sheep (60 kg or over) with lamb(s) up to 6 months	70	39	
	Cattle	1 bull beef, 3 months and over	667	37	
	Cattle	1 beef cow/steer, 13-25 months	750	32	
	Cattle	1 beef cow/steer, 13-25 months	625	47	
	Cattle	1 beef suckler, 25 months and over (500 kg and over)	720	17	





# Harvested Crops



Farm and Cropping Details									
Imports		Exports		Nutrient Balance					
Livestock Exports		Livestock Products Exports		Harvested Crops Exports		Organic Manures Exports		Inorganic Fertilisers Exports	
Crop group	Crop type	N or protei	Units	Quantity harvested t fresh wt	Crop used on farm t fresh wt	Stock at year-start t fresh wt	Stock at year-end t fresh wt	Exported t fresh wt	
*									
▶	Arable - cereals			89.0	89.0			0.0	
	Arable - cereals			255.0	255.0			0.0	
	Arable - cereals			197.0	197.0			0.0	
	Arable - cereals			141.0				141.0	
	Arable - cereals	1.7	% N in 100%	173.0				173.0	
	Arable - cereals	2.0	% N in 100%	306.0	225.0			81.0	
	Arable - cereals	11.4	% protein	396.0	6.0			390.0	

# Nutrient Balance - Imports



Farm and Cropping Details	Imports	Exports	Nutrient Balance			
	Description	Units	Quantity or area t or m3 of fresh wt,ha	Nitrogen (N) kg	Phosphate (P2O5) kg	Potash (K2O) kg
<b>IMPORTS</b>						
<b>Livestock</b>						
	1 bull breeding, 25 months and over	1		18	13	2
	<b>Livestock sub-total</b>			<b>18</b>	<b>13</b>	<b>2</b>
<b>Animal feeds</b>						
	Beef, calf (18% CP)		3	86	41	36
	Beef, grower (16% CP)		6	154	69	73
	Brewers and distillers grain, dry		57	1,952	587	37
	<b>Animal feeds sub-total</b>			<b>2,192</b>	<b>697</b>	<b>146</b>
<b>Bedding</b>						
	<b>Bedding sub-total</b>			<b>0</b>	<b>0</b>	<b>0</b>
<b>Organic manures</b>						
	<b>Organic manures sub-total</b>			<b>0</b>	<b>0</b>	<b>0</b>
<b>Inorganic fertilisers</b>						
	Ammonium nitrate (34.5% N)		38	13,110	0	0
	Muriate of potash		23	0	0	13,800
	Triple superphosphate		22	0	10,340	0
	Urea		24	11,040	0	0
	<b>Inorganic fertilisers sub-total</b>			<b>24,150</b>	<b>10,340</b>	<b>13,800</b>
<b>Fixed nitrogen (from legumes)</b>						
	Grass/clover		109	16,300	0	0
	Other crops (incl. uncropped/fallow)		131	0	0	0
	<b>Fixed nitrogen sub-total</b>			<b>16,300</b>	<b>0</b>	<b>0</b>
	<b>IMPORTS GRAND TOTAL</b>			<b>42,660</b>	<b>11,050</b>	<b>13,948</b>

# Nutrient Balance - Exports



Farm and Cropping Details	Imports	Exports	Nutrient Balance			
	Description	Units	Quantity or area t or m3 of fresh wt,ha	Nitrogen (N) kg	Phosphate (P2O5) kg	Potash (K2O) kg
<b>EXPORTS</b>						
<b>Livestock</b>						
	1 beef cow/steer, 13-25 months	79		1,201	870	123
	1 beef suckler, 25 months and over (500 kg a	17		275	200	28
	1 bull beef, 3 months and over	37		555	402	57
	1 lamb, 6-9 months	255		255	119	18
	1 sheep (60 kg or over) with lamb(s) up to 6	39		68	32	5
	<b>Livestock sub-total</b>			<b>2,354</b>	<b>1,623</b>	<b>231</b>
<b>Livestock products</b>						
	<b>Livestock products sub-total</b>			<b>0</b>	<b>0</b>	<b>0</b>
<b>Harvested crops</b>						
	Barley grain, feed		81	1,377	632	454
	Barley grain, malting		173	2,500	1,349	969
	Barley straw			0	0	0
	Oats grain		141	2,397	1,100	790
	Oats straw			0	0	0
	Wheat grain, feed		390	6,630	3,042	2,184
	Wheat straw			0	0	0
	<b>Harvested crops sub-total</b>			<b>12,904</b>	<b>6,123</b>	<b>4,397</b>
<b>Organic manures</b>						
	<b>Organic manures sub-total</b>			<b>0</b>	<b>0</b>	<b>0</b>
<b>Inorganic fertilisers</b>						
	<b>Inorganic fertilisers sub-total</b>			<b>0</b>	<b>0</b>	<b>0</b>
	<b>EXPORTS GRAND TOTAL</b>			<b>15,258</b>	<b>7,746</b>	<b>4,628</b>

# Girrick Nutrient Balance



	Nitrogen (N) kg	Phosphate (P <sub>2</sub> O <sub>5</sub> ) kg	Potash (K <sub>2</sub> O) kg
<b>Total Imports</b>	42,661	11,050	13,948
<b>Total Exports</b>	15,258	7,746	4,628
Nutrient balance for the whole farm	27,403	3,304	9,320
Benchmark	No benchmark	No benchmark	No benchmark
Nutrient balance per each ha or acre of farmed land (excluding rough grazing)	114	14	39
Benchmark	30 to 120	0 to 30	0 to 60
Nutrient balance per 1000 litres or 1000 gallons of milk	0	0	0
Benchmark	No benchmark	No benchmark	No benchmark

# In Summary



- Farmgate Nutrient Balance offers a fairly quick and easy way to see if your farm has a surplus or deficit of major nutrients
- PLANET Scotland is a free tool which can be used to calculate your nutrient balance
- All of the information needed for the nutrient balance is also required for a carbon audit (which are fully funded)!