

SCAIL input Example

5/16/2016

SCAIL - Simple Calculation of Atmospheric Impact Limits

SCAIL

Simple Calculation of Atmospheric Impact Limits

Simple Calculation of Atmospheric Impact Limits from Agricultural Sources (SCAIL-Agriculture) is a screening tool for assessing the impact from pig and poultry farms on human health and on semi-natural areas like SSSIs and SACs. The model provides an estimate of the amount of acidity and nitrogen deposited from a farm as well as predictions of air concentrations of odour and PM10. These values can then be used to assess whether impact limits for human health or habitats are exceeded or not.

Information regarding the use of SCAIL-Agriculture as a screening tool and instructions for completing the assessment form are provided in the SCAIL-Agriculture User Guide. The User Guide also contains background information on regulatory requirements for the use of SCAIL-Agriculture, including instances where further detailed modelling of emissions will be required. **The relevant regulatory authority should be consulted for guidance regarding assessment requirements for planning and permitting purposes.**

[Scail Home](#) | [User Guide](#) | [SCAIL-Agriculture Report](#) | [Regulator Contact Details](#) | [Online Tutorial](#)

[Load Input Data](#)

Click on the question mark icon (?) to view guidance on each form field.

Project Details

Project Notes (?)

Project Run Mode (?) ☒ Conservative Met ☐ Realistic Met

Location Details

Select Country (?)

Installation Details

Installation (?)

Installation Name (?)

Installation Location (?) ☒ Landranger ☐ x,y [Verify Location \(?\)](#)

Source Details

Source (?)

Source (?) ☐ Pig ☒ Poultry

New or Existing Source (?) ☒ New ☐ Existing

Source Name (?)

Source Location (?) ☐ Landranger ☒ x,y [Verify Location \(?\)](#)

Source Type (?)

Naturally Vented ☐

Building Height m

Fan Location (?)

No. of Fans (optional) (?)

Fan Diameter (?) m

Fan Flowrate (?) m³/s

Livestock Number (?)

Housing Floor Area (?) m²

Type (?)

Give farm name.

Use 'Conservative Met'.

Select **Wales** from drop down.
Wrong country will give inaccurate ammonia calculations.

Give unit / housing a name.

Provide **Grid reference** of proposed unit / housing.
Use **OS x, y co-ordinates** as this seems to give more localised background data.

Select animal type.
Select whether **New** or **Existing** from drop down.

Select source type from dropdown.

Fan flow rate (m³/s) is *not* the same as **fan speed** (m/s). Using **fan speed** will give false results.
Flow rate = $(\pi r^2) \times \text{fan speed}$
 $\pi = 3.14$
 r^2 = radius of fan in metre
fan speed = speed in metres/second

Select **Source Type** from dropdown.
Choosing wrong type will result in inaccurate emissions.

Insert **Housing Floor Area**.
Inaccurate value will give wrong emissions.

Continued...

Details ?
 Fan ventilated, fully littered floor, non leaking drinkers

Total emissions : ?
 NH₃: 1050 (kg)
 PM₁₀: 1050 (kg)
 Odour: 551880000 (kOu)

http://www.scail.ceh.ac.uk/cgi-bin/agriculture/input.pl

If options in drop down do not match system, **Source Type** may be wrong. Re-selecting **Source Type** may provide more accurate system options

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Get Emissions Values ?

NH₃ emission (kg) ? 1050
 (comment)
 PM₁₀ emission (kg) ? 1050
 (comment)
 Odour emission (kOu) ? 551880000
 (comment)
 Designated Site details:
 Search Radius ? 10 km
 No. of Designated Sites ? 15 found
 Run Receptor Search ?
 Verify Receptor Locations ?

Site No.	Name	Distance(km)	Designation	Easting	Northing
1	Caeau Blaen-Byderyn	0.702	SSSI	255795	244215
2	Afon Teifi	1.528	SSSI	256256	246252
3	Afon Teifi / River Teifi	1.529	SAC	256255	246252
4	Corsydd a Rwyth Cilyblaid	2.177	SSSI	254319	245671
5	Llyn Pencarreg	2.512	SSSI	253931	245615
6	Cefn Blaenau	3.211	SSSI	257575	241785
7	Cae Blaen-Dyffryn	4.035	SSSI	260295	244340
8	Comin Silian	6.578	SSSI	256804	251280
9	Parc-y-Rhos	7.967	SSSI	249883	249475
10	Rhos Glwydwrn	8.415	SSSI	250068	250401
11	Caeau Ardwyn	8.832	SSSI	249339	250188
12	Hant Cledlyn Plingos	8.97	SSSI	247998	248170
13	Rhos Glyn-yr-Helyg	9	SSSI	249939	251112
14	Cors Gorsgoch	9.402	SSSI	248383	249828
15	Caeau Llety-Cybl	9.556	SSSI	260254	253413

User specified site 1 Add site
 Site Name Ancient Woodland
 Site Location 257311,244274 Landranger x,y Verify Location ?
 Habitat within site Broadleaved, Mixed and Yew Woodland Check Background Levels ?

Human Health Receptor Details
 Receptor Select Add Receptor PM₁₀ percentile Annual Average ?
 Receptor Name
 Receptor Location Landranger x,y Verify Location ?
 Check Background PM₁₀ Levels ?

Finished adding sources? Save Input Data Calculate Clear Form

Select **10km** as default **Search Radius**. It will find all SAC / SPA and SSSIs in one go. If 5km selected, then additional 10km search will be required for SAC / SPA. Therefore best to do 10km and do not assess SSSIs that are further than 5km away.

SSSI further than 5km not required to be assessed.

Ancient woodlands, local wildlife sites etc. can be included by clicking on **Add site**. More than one can be added by clicking on **Add site**.

If AW / LWS has **Site Name** insert here. If no name then give it an arbitrary name or identification code. Names for additional local sites can be added by selecting the number from drop down.

Select Habitat within site from drop down menu