



Attribute table

QGIS 2.4 - WINDOWS 7 - AUGUST 2014

Goal for this lesson:

In this lesson you will learn to work with attribute data, search and select data, update, create and delete fields.

The steps are:

- Open project
- Look into attribute table
- Sort data
- Select data
- Delete data
- Create fields (column)
- Field Calculator



Data: AgriField.Zip

Source: Markblok data from <https://kortdata.fvm.dk/download/index.html> (Translated and edited)

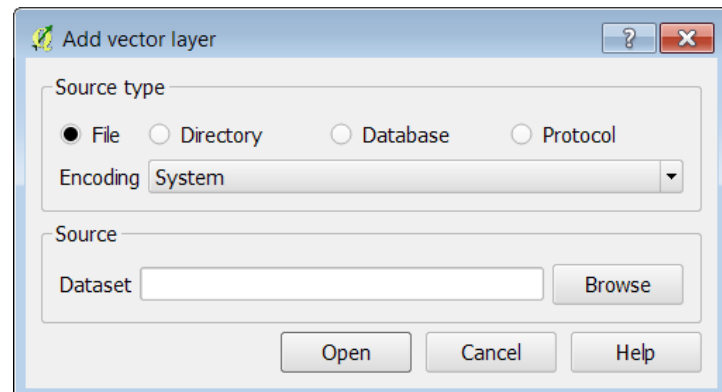
Start lesson

Add Shapefile:

Click on **Layer>Add Vector Layer**

Click **Browse**

Navigate to Lesson3 folder and choose **agricultural_field.shp**



Attribute table

Open the attribute table and see how the data is structured.

Click on **Open Attribute table**

For QGIS help click on In Help you can read about all the functions in detail.

Note: an easy way to see if data type is string (text) or a number; text is aligned left and number right.

Drag or doubleclick on the right side of the column name so you can see the entire content.

| | FieldID | JournInrFs | FieldNo | CropCode | CropName |
|---|---------|------------|---------|----------|-----------------|
| 0 | 620745 | 14-0012254 | 3 | 250 | Permanent ... |
| 1 | 620745 | 14-0012254 | 1 | 11 | Winter wheat |
| 2 | 620745 | 14-0012254 | 12 | 252 | Permanent ... |
| 3 | 620745 | 14-0012254 | 11 | 1 | Spring barley |
| 4 | 620745 | 14-0012254 | 10 | 263 | Grass no clo... |
| 5 | 620745 | 14-0012254 | 14 | 250 | Permanent |

Try to sort a column by clicking in the column name.

You can select data by clicking in the row number. Press Ctrl or Shift to select more than one row.

To clear selection click on Unselect all

| | FieldID | JournInrFs | FieldNo | CropCode | CropName |
|---|---------|------------|---------|----------|--------------------------------|
| 0 | 620745 | 14-0012254 | 3 | 250 | Permanent Grass very low yield |
| 1 | 620745 | 14-0012254 | 1 | 11 | Winter wheat |
| 2 | 620745 | 14-0012254 | 12 | 252 | Permanent Grass |
| 3 | 620745 | 14-0012254 | 11 | 1 | Spring barley |
| 4 | 620745 | 14-0012254 | 10 | 263 | Grass no clover |
| 5 | 620745 | 14-0012254 | 14 | 250 | Permanent Grass very low yield |
| 6 | 620745 | 14-0012254 | 7 | 254 | Eco Grass 0 N |
| 7 | 620745 | 14-0012254 | 4 | 22 | Winter rape |
| 8 | 620745 | 14-0012254 | 9 | 10 | Winter barley |
| 9 | 620745 | 14-0012254 | 2 | 11 | Winter wheat |

Select feature using an expression

In the first expression you are going to search for all Eco Grass 0 N crop names.

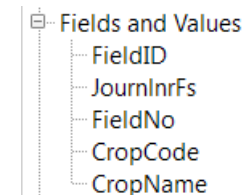
You are going to see how many features are selected, view the selection in attribute table and on a map.

Click on

Drag the windows so you can see both Attribute table and Select by Expression

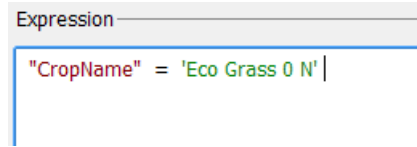
On the Function List look for **Fields and Values**

Click on a small + next to it to expand the list



Doubleclick on **CropName**
 Click on =
 Click on **all unique**
 Doubleclick on **Eco Grass 0 N**

In the Expression box you'll see the result
 "CropName" = 'Eco Grass 0 N'



Click on Select

In the top of the attribute table you can see total number of features and number of selected features.

| | FieldID | JournInrFs | FieldNo | CropCode | CropName |
|----|---------|------------|---------|----------|---------------|
| 0 | 620745 | 14-0012254 | 3 | 250 | Permanen... |
| 1 | 620745 | 14-0012254 | 1 | 11 | Winter wh... |
| 2 | 620745 | 14-0012254 | 12 | 252 | Permanen... |
| 3 | 620745 | 14-0012254 | 11 | 1 | Spring bar... |
| 4 | 620745 | 14-0012254 | 10 | 263 | Grass no c... |
| 5 | 620745 | 14-0012254 | 14 | 250 | Permanen... |
| 6 | 620745 | 14-0012254 | 7 | 254 | Eco Grass... |
| 7 | 620745 | 14-0012254 | 4 | 22 | Winter rape |
| 8 | 620745 | 14-0012254 | 9 | 10 | Winter bar... |
| 9 | 620745 | 14-0012254 | 2 | 11 | Winter wh... |
| 10 | 620745 | 14-0012254 | 6 | 252 | Permanen... |
| 11 | 620745 | 14-0012254 | 10A | 10 | Winter bar... |
| 12 | 620745 | 14-0012254 | 7B | 310 | uncultivated |
| 13 | 620745 | 14-0012254 | 7-1 | 254 | Eco Grass... |
| 14 | 620745 | 14-0012254 | 6A | 252 | Permanen... |

Viewing the selection

There are several ways to view the selected data:

Move selection to top

Zoom map to selected rows

Show Selected Features Filter data to only view the selected rows

Show All Features Shows all data in the attribute table

Invert selection – note in the 'topbar' how many selected features.

Delete data

For deleting, the dataset must be in editing mode Click on **Toggle editing mode**

When a row is selected it can be deleted by clicking on **Delete selected feature**

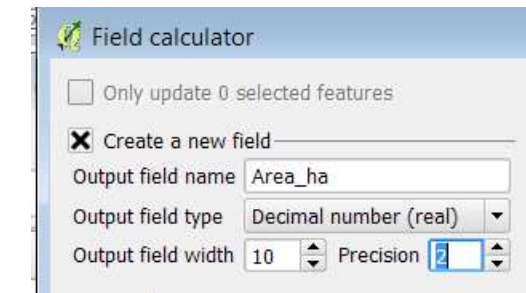
Field Calculator

Using field calculator you can calculate, update and create data.
 The first task is to create a new field calculating the area for the polygons.
 When you work with UTM the area unit is in m².
 The area of the polygons – agricultural fields – is large, so you have to calculate the area in hectare with 2 decimal. The formula for this is **\$area / 10000**

Before you start - remember to **Unselect** all features and that you need to be in the **Editing mode**.

Create new field and calculate area

Click on **Field Calculator**
 Write the Output field name **Area_ha**
 Choose Output field type to **Decimal number**
 Choose precision **2**



Click on **+ Geometry**
 Double click on **\$area**

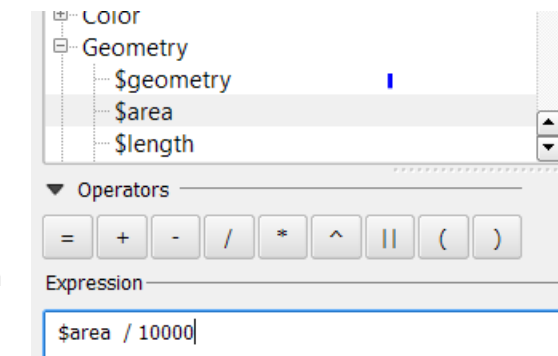
Click on /

In Expression write **10000**

Click on **OK**

Look in the attribute table and see the new column

Remember to save



Select data and create new field for selected data

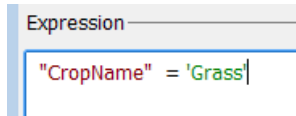
When you look into the data you can set the crops into different categories: Grass, Grain, Rape, Uncultivated and 'Other'. Now you have to select the data in the category and then create a new field and fill in the category.

Next category you select – and **not** create a new field - but 'Only update selected features'.

First you have to select all the rows with 'Grass'

Click on  **Select by Expression**

Create an expression like this >
Note that text (String) is between “ “



Click on **OK**

Look into the attribute table and examine the result.
The result is very poor... What is wrong?

You don't have any data named only '**Grass**'

You have ex: 'Permanent Grass' or 'Permanent Grass and clover'

There are more text variations than Grass.

You have to use an **Operator** called **Like**

Start again by Double clicking on **CropName**

Click on **+ Operators**

Double click on **Like**

Write '**%Grass%**'

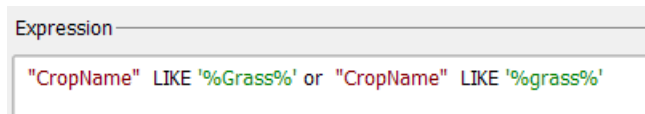


Click on **OK**

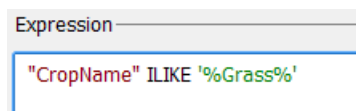
Look into the result – is it ok?

No it is not.... There is also Grass written with lowercase grass as in *Clovergrass Less 50% Clover*

So now you have to add extra in the expression using **OR**

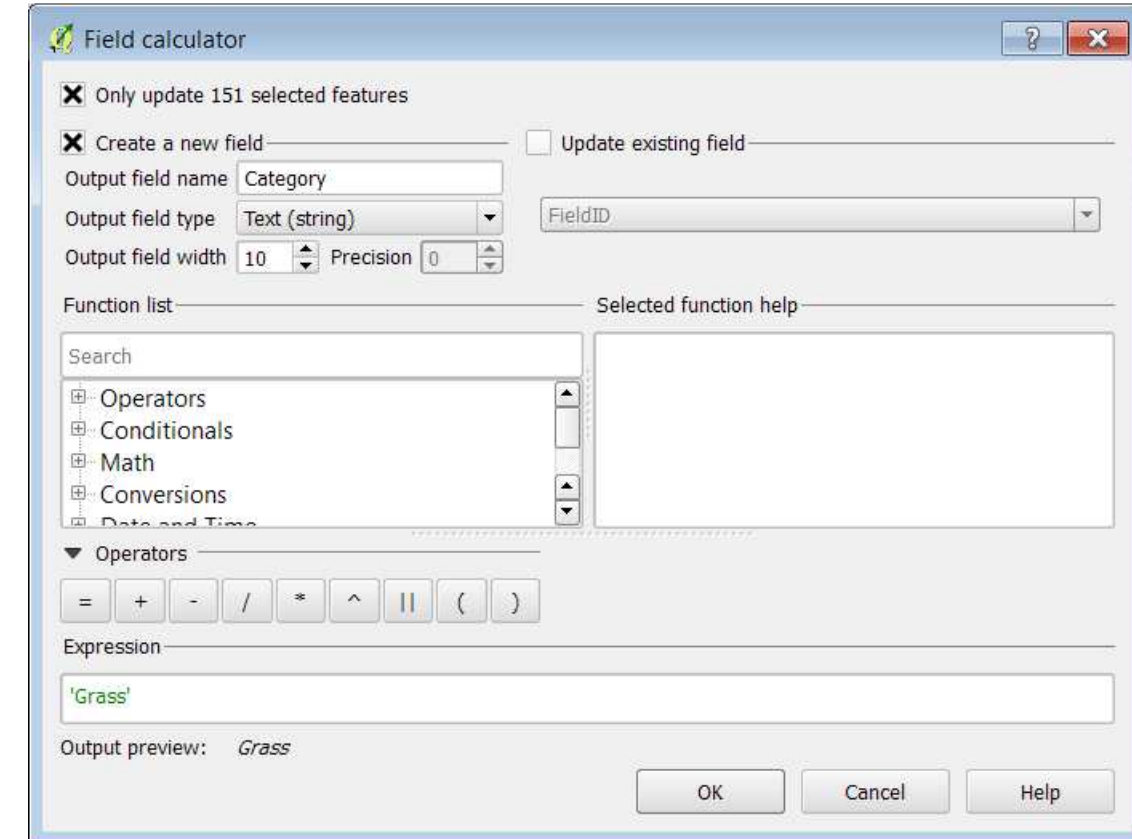


Or simply using **ILIKE** which is not case-sensitive



Create new field and only update selected features

Click on  **Field Calculator**



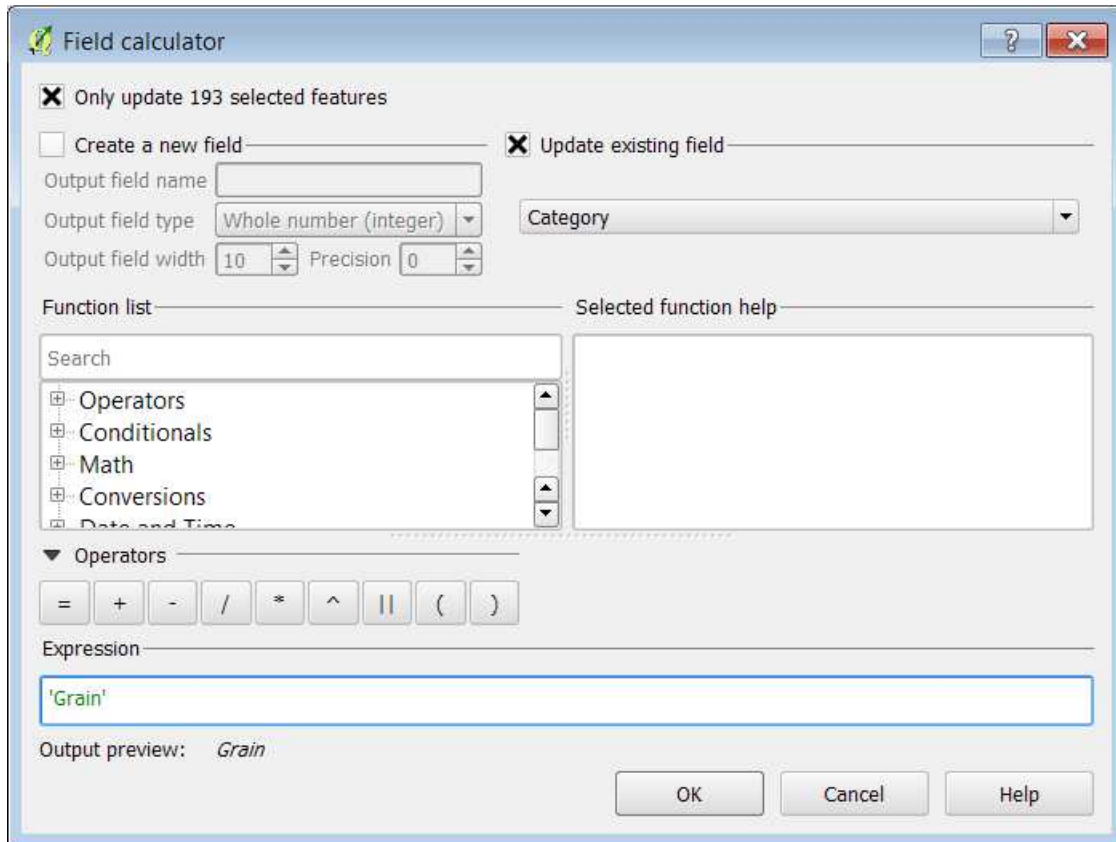
Click on **OK**

Go back to **Select by Expression**
Now select all the grain -

The grain can be found by **'Winter'**, **'Spring'** or **'Oat'**, so you have to make a very long expression – it can be done in shorter way – but for now use this:

```
Expression  
"CropName" LIKE '%Winter%' or "CropName" LIKE '%Spring%' or "CropName" LIKE '%Oat%'
```

Go back to the Field calculator



Click on **OK**

Back to **Expression** and select all the empty (NULL) in **Category**
Double click on Field **Category**
Choose or write **IS**
Click on **All unique**
Double click on **NULL**

Click on **Select**

```
Expression  
"Category" IS NULL
```

Go back to the Field calculator and update with the text **'Other'**

Remember to Save 