

A man and a woman are sitting at a desk, looking at a computer monitor. The woman is on the left, wearing a light blue shirt, and the man is on the right, wearing a plaid shirt. They are both looking at the screen with interest. A desk lamp is visible on the right side of the desk.

Variable Rate Sowing tool

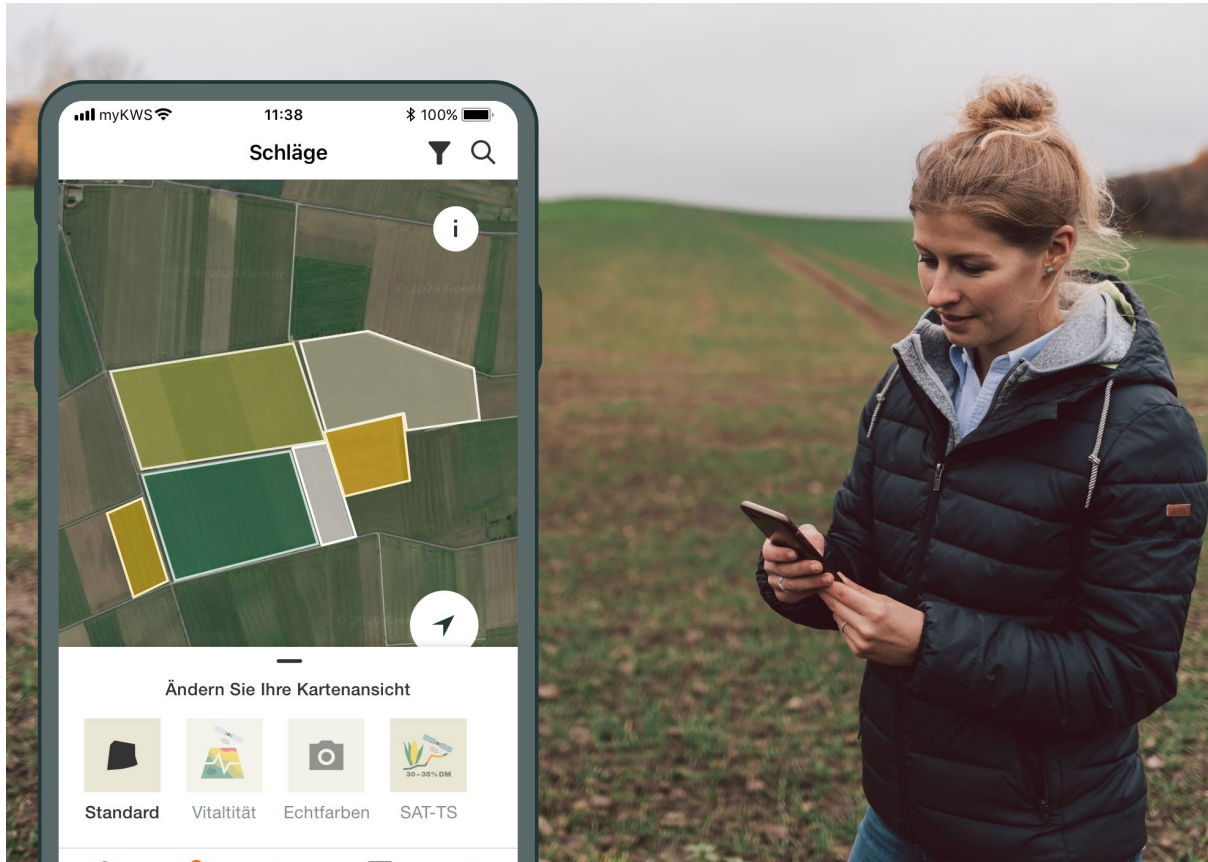
The new digital tool from KWS works with specific field conditions, using satellite images and knowledge of different growth potential

SEEDING
THE FUTURE
SINCE 1856



Variable rate sowing

What can you find in this manual?



1

General Information

General explanation on the tool - Full registration for the tool - myKWS Registration

2

Activation of your hectares

A KWS representative will get in contact with you and give you a voucher for a certain amount of hectares.

3

Customize your Field

How to create a field and specify certain parameters so the tool can work properly

4

How to use the tool

How to export the sowing map in order to be able to use the tool

5

What to expect after

After you have the map and finish the process, what to expect from it?

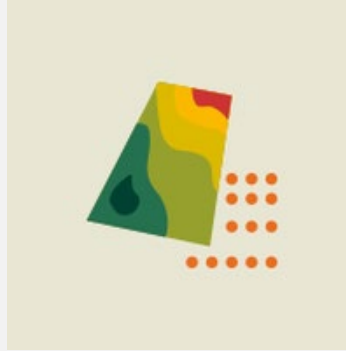
1. General Information

We augment the objective data with empirical values and knowledge about varieties



How we do it?

- The production potential of agricultural land can be estimated on the basis of satellite images recorded over several years and this data is then transformed into maps for sowing.



How do we read the information?

- The bluer or greener the shade the higher the growth potential is
- The redder the map, the lower the growth potential of the plot is
- Blue > green > yellow > orange > red



Benefits

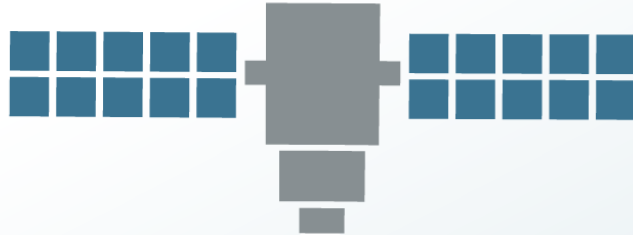
- Concentrating on sub plots rather than having a look at the capabilities of whole fields help to achieve good growth in different areas and even under less favorable conditions

Now available for cereals
and maize!

Optimize your seed rate for cereals



- 1 Create your **myKWS** account and **mark your acreage**



- 2 The satellites gather **images** of your fields

growth
conditions

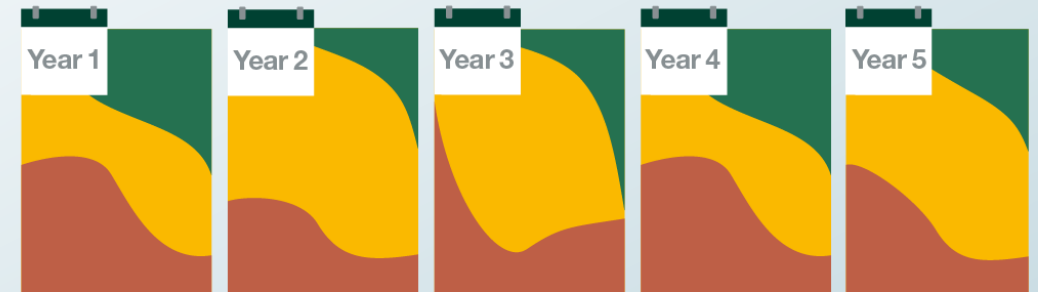


less good

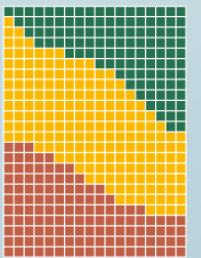
good

optimal

- 3 We recommend you a **precise zoning** for every part of your field. With your expert knowledge you can **optimise the seed rate** for every zone



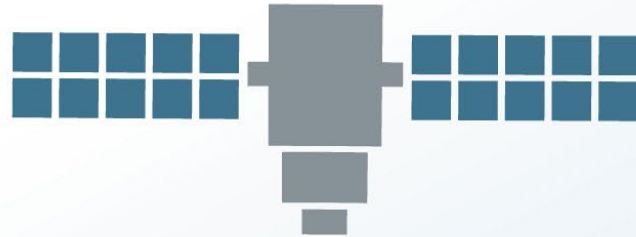
- 4 You **transmit the optimized seed rate map** to the sowing machine



Optimize your seed rate for corn



- 1 Create your **myKWS account** and **mark your acreage**



- 2 The satellites gather **images** of your fields

growth
conditions



less good

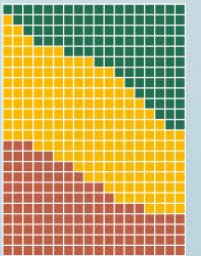
good

optimal

- 3 We continuously **analyze the data** and we recommend you the optimal seed rate across your acreage

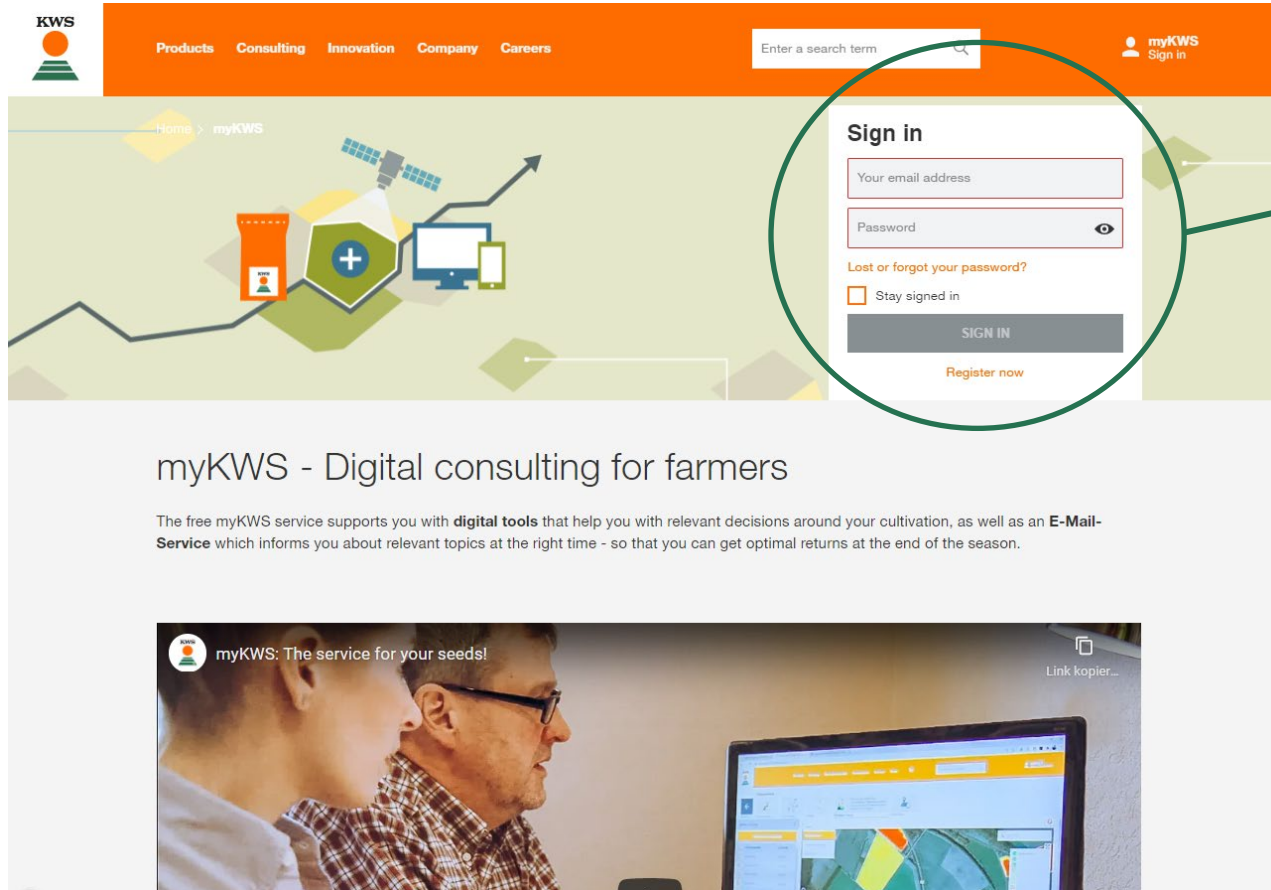


- 4 You **transmit the optimized seed rate map** to the sowing machine



1. General information

myKWS registration



Where to register

- To use our map-based services, you need a registered myKWS account.
- You can login on myKWS by visiting our KWS-webpage:
<https://www.kws.com/gb/en/mykws/>
and entering your username and your password.
- If you are new on myKWS, please register with your name, your email address and create a new password.

1. General Information

Full registration for the VRS tool



- ✓ To use the VRS tool a full registration is needed, we need this information in order to make the tool work, so we ask you to fill in the information carefully
- ✓ On the main landing page, you will find a link to the full registration

Create a myKWS account to use our Variable Rate Seeding

Top Tool Registration – Variable Rate Seeding

Salutation

Academic title

Your first name *

Your last name *

E-mail address *

Repeat your email-address *

Password *

Company

Street and house number *

Postal code *

Place *

District

Country
United Kingdom

Mobile number

Phone number

Fax number

* Required information

CANCEL

REGISTER

VARIABLE RATE SOWING

This tool can estimate different soil production capacity from satellite images and give you the possibility to choose different seeding densities for subplots to achieve an optimal yield in your field

Variable Rate Sowing

Making optimal use of the potential arable land

- ✓ Optimizing sowing with satellite maps
- ✓ Exploiting the yield potential of good subplots
- ✓ Avoid stress on less good partial areas

Variable Rate Sowing for maize and cereals

Agricultural land varies greatly in terms of soil structure and water holding capacity and often changes within an area. This makes it difficult to meet all conditions when selecting the optimum seeding rate. With variable rate seeding, you have the option of responding to the conditions of the subplots

Variable Rate Sowing Corn

[Find out more](#)

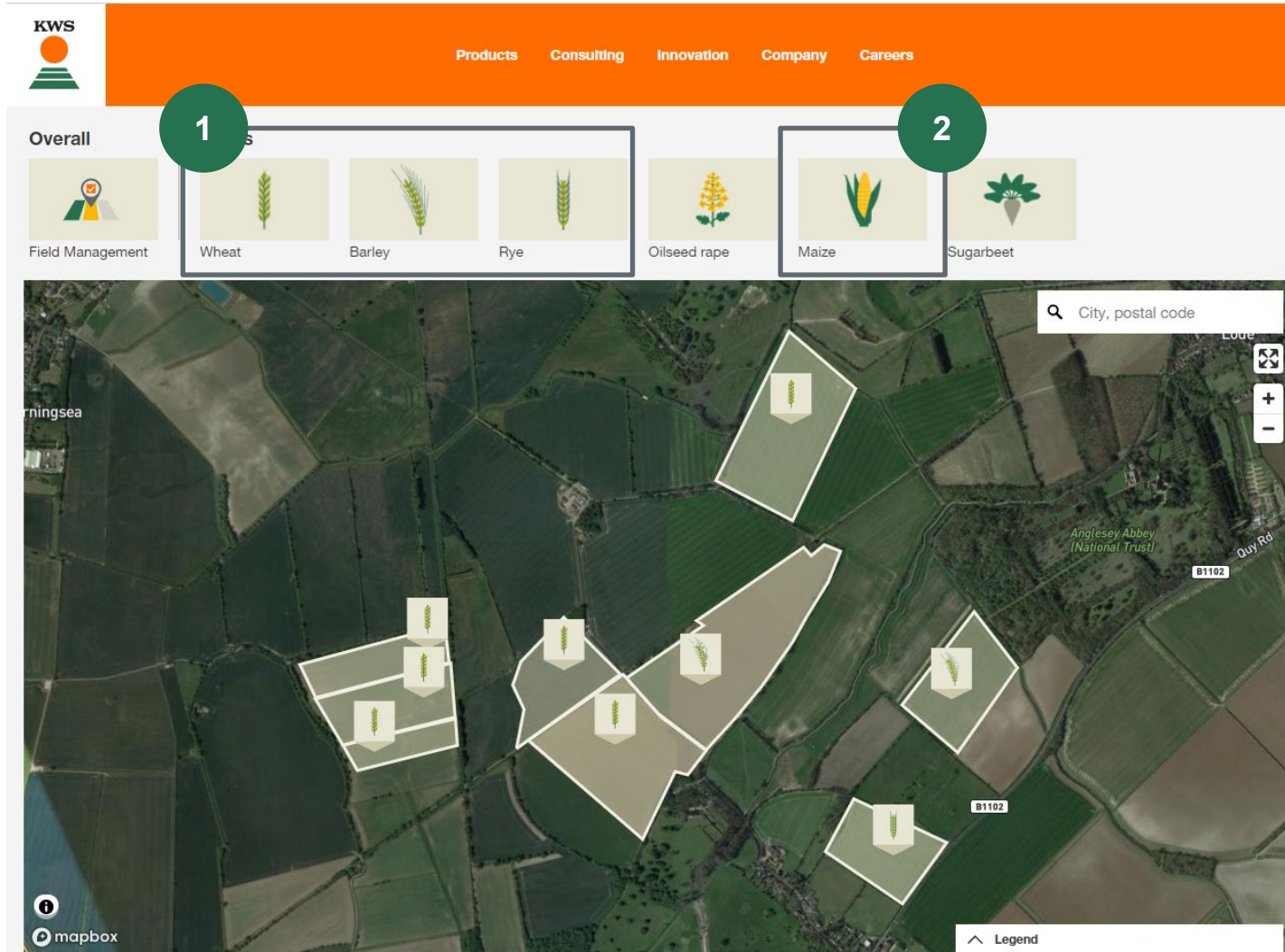
Variable Rate Sowing Cereals

Register for the upcoming season

REGISTER

Just click on the button „REGISTER“ and fill out the registration form (see left side)

1. General information



Once you are registered and logged in, you find yourself on your personal myKWS page with various information

Therefore, choose...

1. either a cereals crop (wheat, barley, rye)
2. or maize

2. First steps



KWS

Products Consulting Innovation Company Careers

Enter a search term

myKWS KWS Tutorial

Maize

Start page Maize Seed Service Field Vitality Check Variable Rate Seed Calculator Heat Unit Tool Soil Temperature Tool Damage Symptom ... Seed Requirement

My fields

You may add a field(s) with a total area of: 122.02 ha

EXPORT PRESCRIPTION MAP

+ CREATE NEW FIELD

	FIELD NAME	AREA
<input type="checkbox"/>	Plusterwine Farm	5.78 ha
<input checked="" type="checkbox"/>	VRS UK 1	11.85 ha

Map Activation

None

High Ash Rd

Place, Post code

Once you are registered and logged in, you find yourself on your personal myKWS page with various information

Therefore:

1. Click on the tool icon for Variable Rate Seeding to open the tool

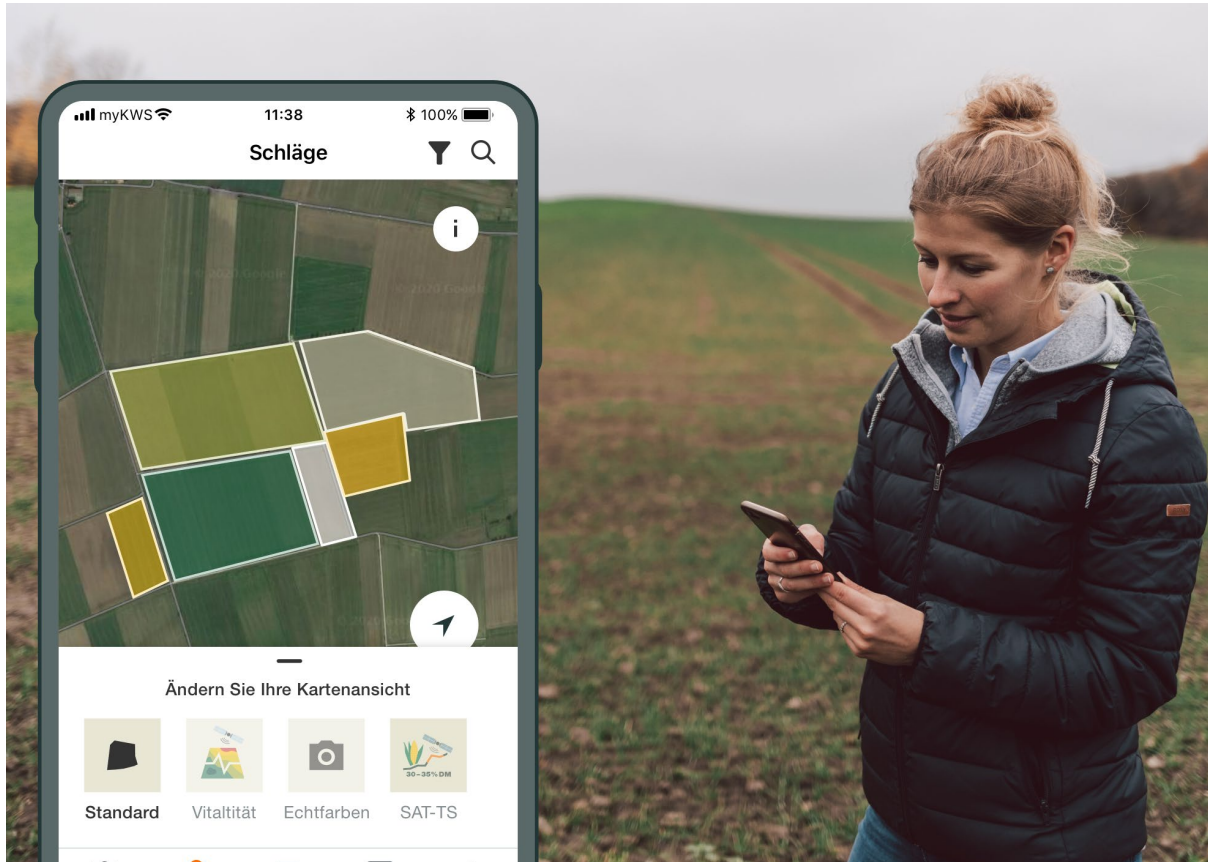


Before you can use the tool, you need a voucher number (6 digits) given to you by KWS (Please contact your personal KWS consultant or send us an e-mail: ukmarketing@kws.com)

2. To activate your voucher code please click on **“Activation”**

Variable rate sowing

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After you have the map and finish the process, what to expect from it?

2. Activation of your hectares



KWS

Products Consulting Innovation Company Careers

Enter a search term

myKWS KWS Tutor

Maize —

Start page Maize Seed Service Field Vitality Check Variable Rate Seed Calculator Heat Unit Tool Soil Temperature Tool Damage Symptom ... Seed

My fields

You may add a field(s) with a total area of: 122.02 ha

EXPORT PRESCRIPTION MAP

+ CREATE NEW FIELD

FIELD NAME	AREA
Plusterwine Farm	5.78 ha

Map Activation

Activate field quota

You can activate an area quota for VRS, by redeeming your vouchers and providing the corresponding information about the purchased

YOUR QUOTA FOR 2021: 12

ADD ADDITIONAL QUOTA

Activation of fields for variable rate sowing

KWS my KWS

1. Activation 2. Summary

Do you have a voucher code for variable rate sowing?

VOUCHER CODE

570432 (10 ha)

Voucher code

ACTIVATED AREA

Please active a valid voucher code

ACTIVATE

To activate the hectares your personal consultant will give you follow the next steps

1. Click on the grey button to type in your voucher code number
2. Type in your voucher code number and click “Activate”
3. The voucher code number shows, how much hectares are activated

2. Activation of your hectares



Activation of fields for variable rate sowing



✓ 1. Activation

2. Summary

Summary

Here you can see an overview of your activated quota (ha) for VRS, for the current season.

SOURCE	ACTIVATED AREA
Vouchers	10 ha
TOTAL	10 ha

After completing this process, you will be able to add your fields to the variable rate sowing tool. The total area of fields permitted, will be dictated by the amount of quota you have available.

The screenshot shows the KWS myKWS portal interface. At the top, there's a navigation bar with 'Products', 'Consulting', 'Innovation', 'Company', and 'Careers'. Below this, a 'Maize' section is active, showing various tools like 'Variable Rate Seed Calculator', 'Heat Unit Tool', 'Soil Temperature Tool', 'Damage Symptom ...', and 'Seed Requirement'. The 'My fields' section is highlighted, showing a list of fields with a total area of 132.02 ha. A green circle with the number '2' points to the 'CREATE NEW FIELD' button. The map shows a yellow field being added to the activated area.

Please press “Next” and you will see a summary of your activated acreage.

1. To finish with your Activation process, please click on “**Finish**”

You will come back to the main view

2. Now you can create a field by clicking on the orange button “**Create New Field**”

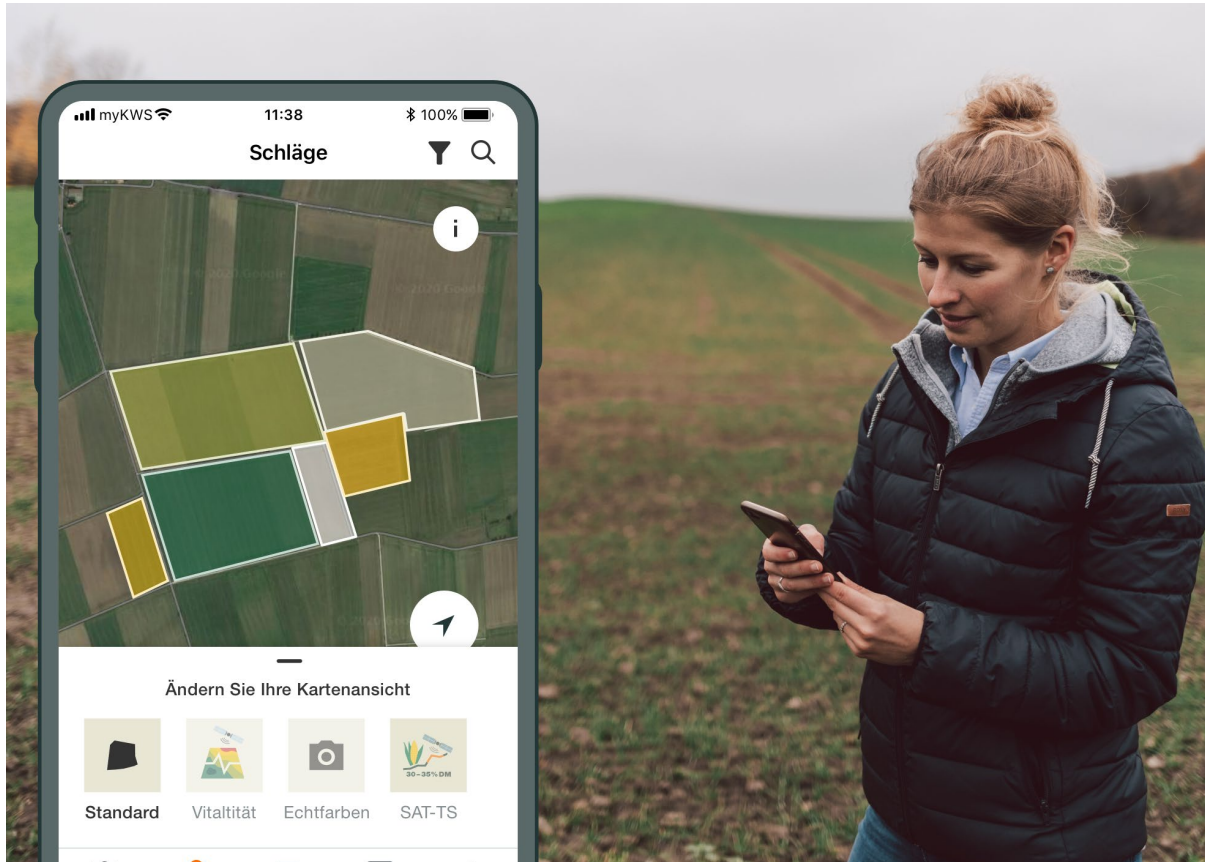
BACK

FINISH

1

Variable rate sowing

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3. Customize your Field- Method



Add field

KWS

my KWS

1. Method

2. Add field

3. Sowing details

To add your fields, please select one of the following methods.

Drawing

Draw your field boundary on the map.

1

Import

Import Shape or KML files

2

Field Management

Select field from Field Manager.

3

CANCEL

To add a new field there are three different methods

1. Drawing:

Using this method you can draw your fields on a map.

2. Import:

Upload your fields as a shape or KML file. With this method you can for example import your fields from your field catalogue.

3. Fieldmanagement:

Using this function you can import fields that were already created in another tool or in a previous year.

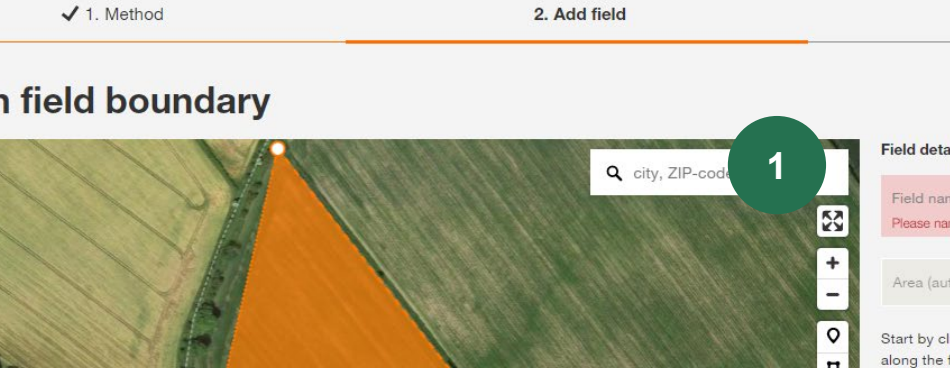
3. Customize your Field— Add field



Add field

✓ 1. Method
2. Add field
3. Sowing details

Draw in field boundary



Field details

Field name
Please name your field.

Area (automatically calculated)

Start by clicking on any field corner and proceed by clicking along the field boundary. To end the drawing process please click once on the start point.

Click on the newly created field boundary to make adjustments where necessary.

CANCEL
NEXT

1. Find your location:

Use the search function to find your location.
You can grab and move the map, also is posible
to zoom by using the mouse-scroller or the +-
buttons

2. Draw your field:

Draw in a field by clicking on one corner after another, with a double click you can finish drawing.

3. Name your field:

Please enter a name for the field afterwards, this will allow you to find it easily in all our tools

4. Field Size:

The field size is calculated automatically.

3. Customize your Field - Add field



The screenshot shows the 'Add field' interface of the KWS application. At the top, there is an orange header bar with the text 'Add field' and the KWS logo. Below the header, there are three tabs: '1. Method' (checked), '2. Add field' (active), and '3. Sowing details'. The main area is titled 'Draw in field boundary'. It features a map with a green field boundary drawn on a brown background. A search bar at the top right of the map contains the text 'city, ZIP-code'. A toolbar on the right side of the map contains several icons, including a pen icon (labeled with a green circle '1') and a square icon (labeled with a green circle '2'). The 'Field details' panel on the right shows the 'Field name' as 'CSS' and the 'Area (automatically calculated)' as '3.70 ha'. Below this, there is a text box with instructions: 'Start by clicking on any field corner and proceed by clicking along the boundary. To end the drawing process please click on the start point.' and 'Click on the newly created field boundary to make adjustments where necessary.' At the bottom left, there is a 'CANCEL' button. At the bottom right, there are 'CANCEL' and 'NEXT' buttons.

1. Change and edit field boundaries

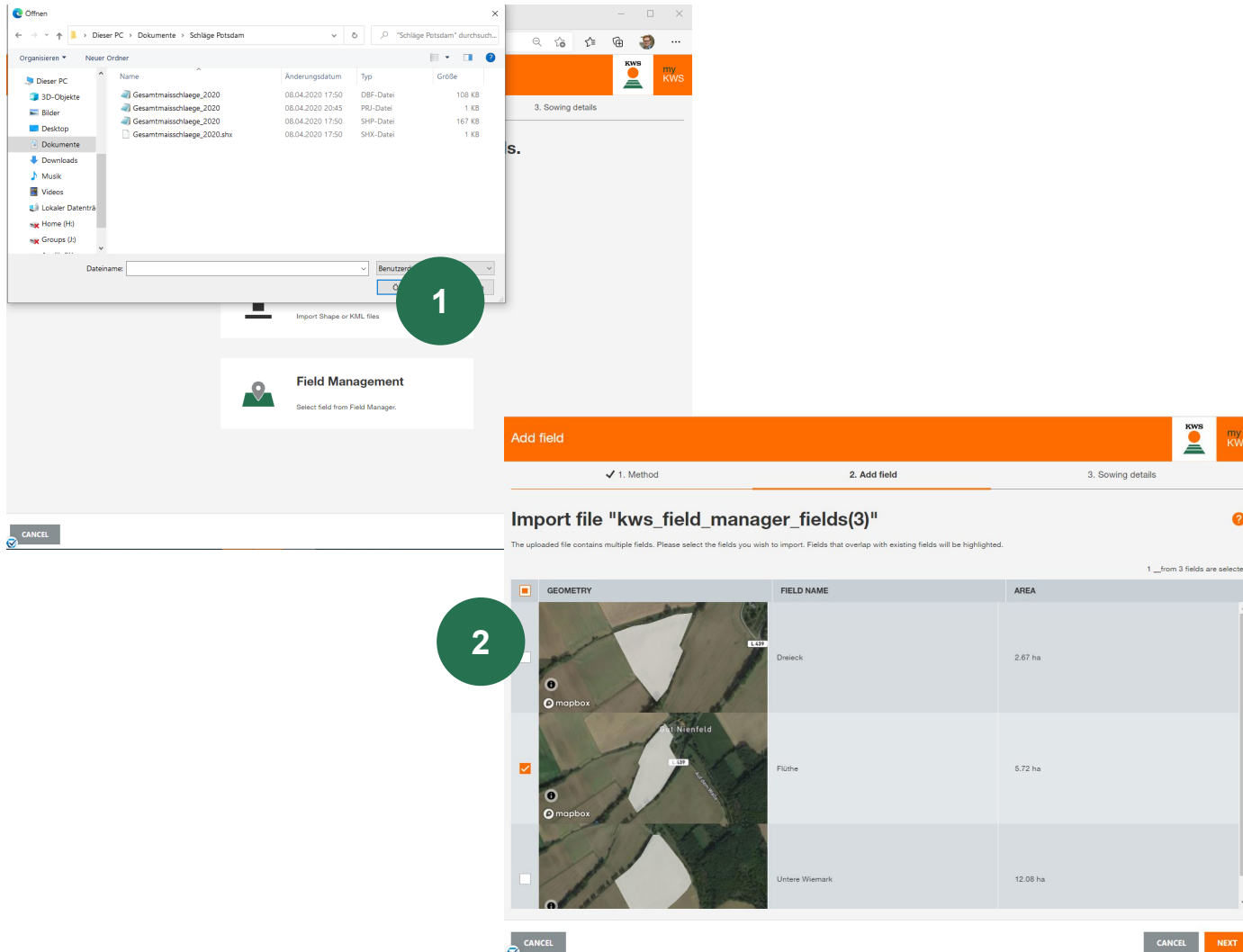
With a click on the pen symbol, you can move and adjust all border points.

2. Include field elements inside the plot

You can also include field elements such as groups of trees within the field when drawing.




Therefore, click on the square symbol, then you can mark and draw the borders of the field element by left-clicking

3. Customize your Field - Import



1. Use the import functionality.

2. Select the fields you want to import

GEOMETRY	FIELD NAME	AREA
	Dreieck	2.67 ha
	Fluthe	5.72 ha
	Untere Wiemark	12.08 ha

1. Use the import functionality.

Here you can import fields from InVeKos- data or from your field catalogue. We support shape- and KML file formats.

Click on Import and select the wanted file on your local computer.

Please keep in mind that a complete shape-file consists of a minimum of 3 individual files

2. Select the fields you want to import

A selection table will then open, here you can see all fields from the Shape file

Select with a check in the first coloumn the fields you want to import to the Corn Seed Service, in some cases, it might be necessary to add the name to a field.

If a field from the list already exists, we will show the amount of overlap. A further import is not possible.

3. Customize your Field – Field Management



2. Add field

3

ds, please select one of the following methods.

Drawing
Draw your field boundary on the map.

Import
Import Shape or KML files

Field Management
Select field from Field Manager.

1

Add field

KWS

DIY KWS

✓ 1. Method

2. Add field

3. Sowing details

Add fields from field management.

You are able to select from 4 fields.
Please select the fields you wish to import.

0 from 4 fields are selected.

<input type="checkbox"/>	GEOMETRY	FIELD NAME	AREA
<input type="checkbox"/>		Outer farm	1.76 ha
<input type="checkbox"/>		Plustervine Farm	5.78 ha
<input type="checkbox"/>		VRS UK 1	11.85 ha

CANCEL

CANCEL

NEXT

1. Import your fields with the Field Management

In the Field Management you can see all fields you created already in previous years or in another tool.

2. Select Fields

Please select all fields you want to import by using the checkbox in front of the the map

3. Customize your Field – Sowing details maize



Add field

✓ 1. Method

✓ 2. Add field

3. Sowing details

4. Choose years for analysis

4

Sowing details

Please add all information to your sowing. These information are necessary to give you a variety specific sowing recommendation for your field.

FIELD NAME	VARIETY	USE	SOIL TYPE	IRRIGATED	FAO	SOWING DENSITY
VRS	<div>Not specified Please select a variety</div> <div><div>AMAROC</div><div>AMBROSINI</div><div>AUGUSTUS KWS</div><div>AURELIUS KWS</div><div>AUTENS KWS</div></div>		<div>Please choose a soil type.</div>	<div>Please select, whether your field is irrigated.</div>		

CANCEL

BACK

FINISH

Here you can see the field that we already created

1. Add the **name of the variety** that you will sow, the added value we give, is that we calibrate the tool from a deep knowledge of the variety
2. Add The Soil type (Sand /Loam /Clay)
3. Specify If is irrigated (No / Yes / Maybe)

After this you click “Next”, and the program will automatically go to Years of analysis

3. Customize your Field – Sowing details cereals



Add field

KWS

my KWS

✓ 1. Method

✓ 2. Add field

3. Sowing details

4. Choose years for analysis

Sowing details

Please indicate the variety you want to sow on this field. The more information you provide regarding the other factors, the better our advice and future recommendations for your sowing can be.

FIELD NAME	CEREAL TYPE	VARIETY	SOIL TYPE	SOWING PERIOD	FIELD CONDITION	USAGE
cereals	1 Winter wheat	2	3	4	5	6
	Winter Barley					
	Winter Rye (Hybrid)					
	Spring Barley					
	Spring wheat					

CANCEL

BACK

FINISH

Here you can see the field that we already created

Cereals Type and Variety are **mandator!**

1. Please choose the **cereals type** from the drop down menu
2. Add the **name of the variety** that you will sow

Numer 3 – 6 are **optional details**. With these details you help us to further improve the tool



3. Add The Soil type (Sand /Loam /Clay)
4. Specify the sowing period (early/ middle/ late)
5. Choose the special field conditions (dry / appropriate / muddy)
6. Add the usage (biogas / feed / whole crop silage / milling / multiplication)

After this you click “Next”, and the program will automatically go to Years of analysis

3. Customize your Field – Choose years of analysis



Add field






✓ 1. Method ✓ 2. Add field ✓ 3. Sowing details **4. Choose years for analysis**

Years of analysis

Please select the years to be considered in the site-specific analysis of the yield potential.
Important: For a good result, the field should have been managed uniformly in these years. If the field was cultivated in a split way in one of the last years, please leave this year out of the calculation.

FIELD NAME	VARIETY	ANALYSIS YEARS
cereals	KWS ALABASTER	<input checked="" type="checkbox"/> 2016 <input checked="" type="checkbox"/> 2017 <input checked="" type="checkbox"/> 2018 <input checked="" type="checkbox"/> 2019 <input checked="" type="checkbox"/> 2020

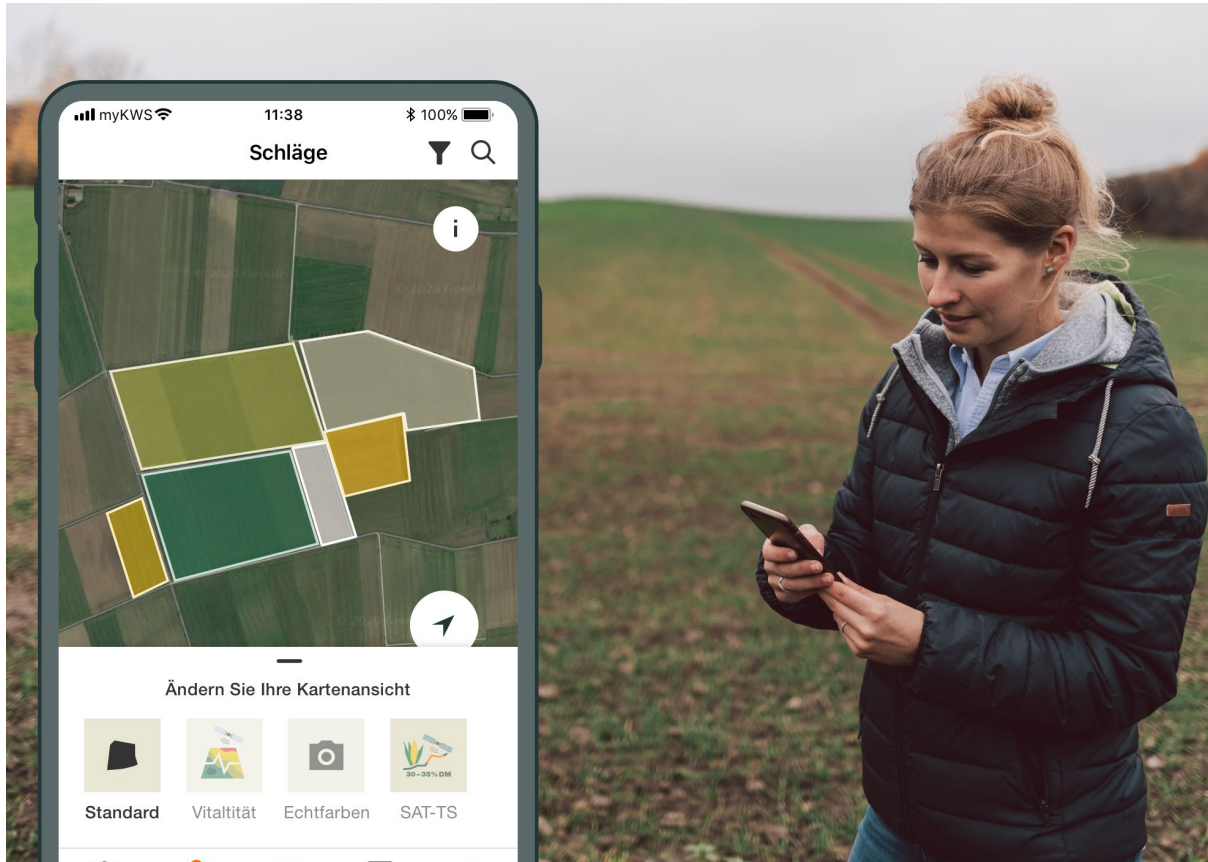


 **CANCEL** **BACK** **FINISH** 

1. **“Choose years of analysis”**, More years are selected, more accurate the tool projections, therefore you are not allowed to deselect more than 2 years and we present the last 5 years
2. Please click on finish to close the “Add field” process. Now you successfully registered your field for the VRS service! 😊

Variable rate sowing

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4. How to use the tool – Display options



Maize —

Start page Maize Seed Service Field Vitality Check **Variable Rate Seed Calculator** Heat Unit Tool Soil Temperature Tool Damage Symptom ... Seed R

My fields >

You may add a field(s) with a total area of: **124.79 ha**

EXPORT PRESCRIPTION MAP

+ CREATE NEW FIELD

<input type="checkbox"/>	FIELD NAME	AREA
<input type="checkbox"/>	Plusterwine Farm	5.78 ha
<input type="checkbox"/>	VRS	7.23 ha
<input checked="" type="checkbox"/>	VRS UK 1	11.85 ha

Map Activation

None **1**

Aerial Image

Classification

Zones

High Ash Rd

Place, Post code

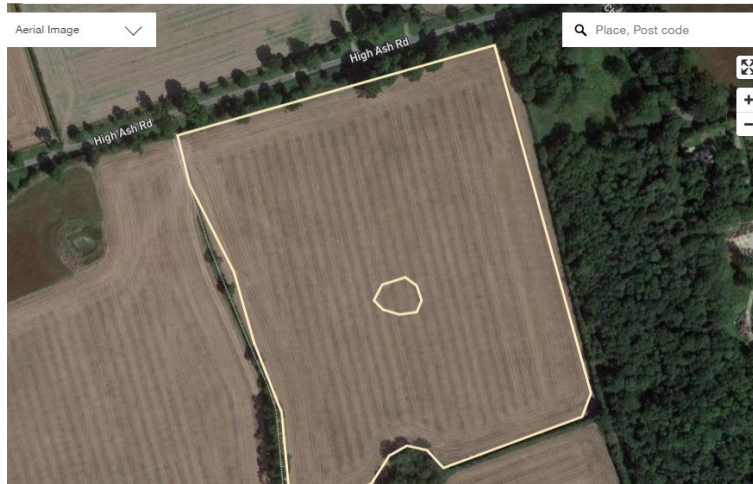
You are getting back to the initial view, now with your field drawn in

1. The **drop-down menu** gives you some display options:

- ✓ Aerial Image: satellite photo
- ✓ Classification of the field
- ✓ Different zones of the field

Note: The processing of the classification and zones takes from 30 mins up to 24 hours!

4. How to use the tool – Display option



Satellite Photo

The satellite photo shows the normal image the farmer is used to when he is using google maps and comparable services. This view can be used to check if the field boundaries are correct



Classification

The classification map shows the results of the satellites analysis of growth potential. Blue and green areas have shown bigger growth potential over the years of analysis and orange and red areas have always shown less good growth conditions. This map cannot be changed.



Zones

The zoning map shows the different zones for sowing. Every color is a different sowing density. These zones result out of the classification map and can be adjusted and adapted to the farmers needs. This is described in the next steps.

4. How to use the tool – Edit zones



Variable Rate Seed Calculator

Map Activation

None

Place, Post code

VRS UK 1 (11.85 ha)

AMAROC
Zones: 24
Ø Density Plants/m²: 9
Calculation of management: Completed

EDIT FIELD
DELETE FIELD
EDIT ZONES

KWS

Products Consulting Innovation Company Careers

Maize

Start page Maize Crop Manager Field Scout Maize Seed Service Field Vitality Check Variable Rate Seed Calculator Heat Unit Tool

Back to field management

Edit field zones „VRS UK 1”

Zones

Max. Classes: 3

DELETE ZONES SAVE ZONES

DENSITY	SOWING DENSITY	TOTAL AREA [HA]
Low	8	1.34
Middle	9	6.6
High	9	3.92
	Ø 8.89	11.85

100
90
80
70
60
50
40
30
20
10
0

Low Average High

mapbox

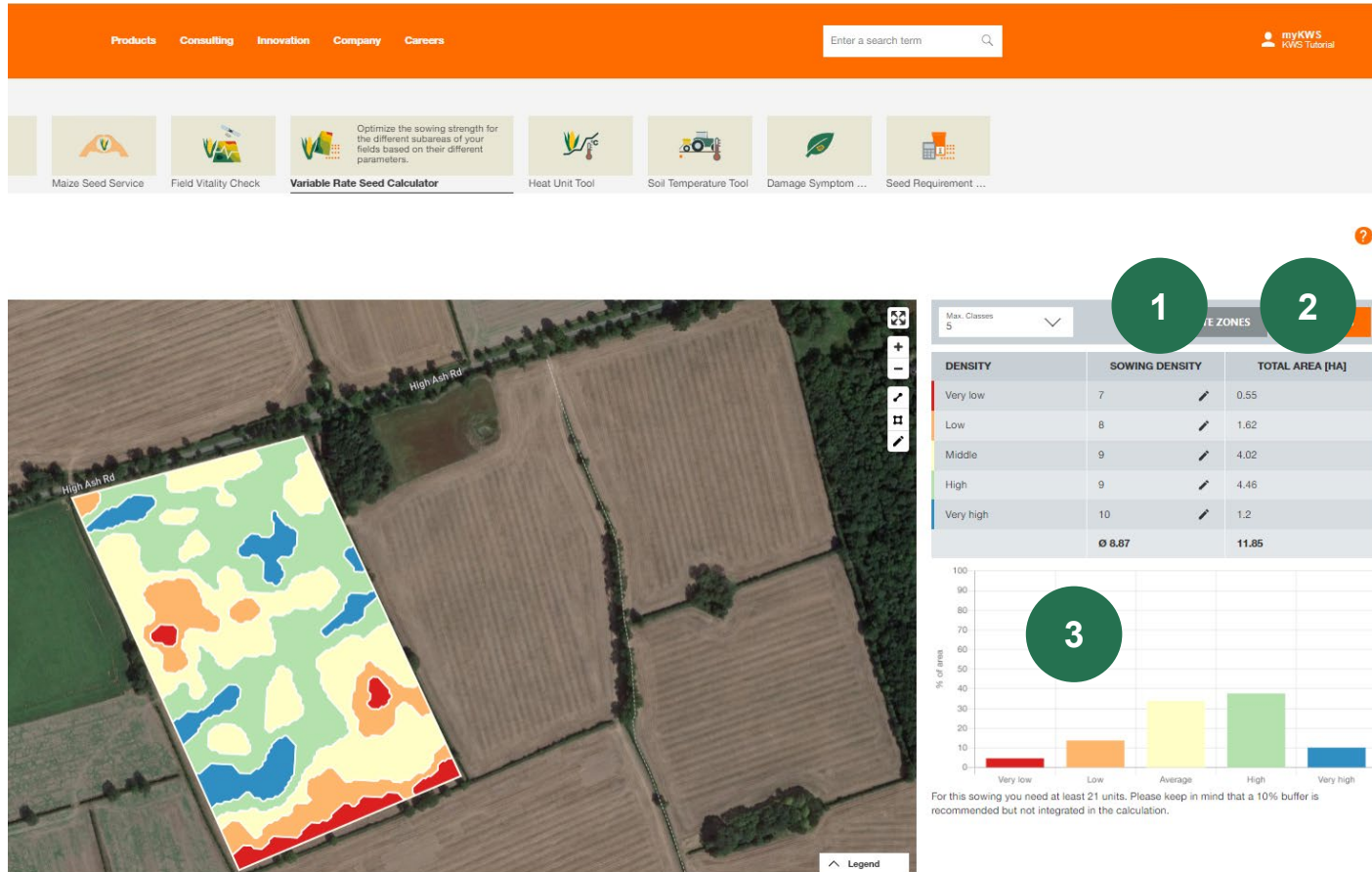
Legend

Coming Back to the main view we can tell the tool how many zones we want to work with

More zones will be more specific but more complicated to apply

1. By **clicking on the field**, you see an overview of the drawn field (e.g., variety, amount of hectares...) and you can edit the different zones of the field by **“Edit zones”**
2. In the zone editing mode you can choose via drop down menu the number of different zones on your field – according to your knowledge and experience on this field
3. At the end don't forget to **“Save”** your edited zones

4. How to use the tool – Last adjustments maize



According to the chosen number of zones, you can find various information regarding your field

1. **“Sowing Density”**: This column shows our recommended sowing rate for each zone. You can adjust this according to your needs with the pencil in the right side
2. **“Total area”** shows the total size of the zones
3. The graph shows the percentage area distribution of the density zones

4. How to use the tool – Last adjustments cereals



KWS

Products Consulting Innovation Company Careers

Enter a search term

myKWS Kerstin Grabbe

← Wheat +

Wheat Crop Manager Field Scout Variety Comparison Winter wheat Field Vitality Check Seed Requirement And Seed Rate Damage Symptom Finder Fusarium Risk Check Variable

← Back to field list

Edit field zones „Testing Mail”

Zones

1

Max. zones 5

1

ONES SAVE ZONES

TGW [g] 47 Germination [%] 95

GROWTH POTENTIAL	SOWING DENSITY [KERNELS/M ²]	SOWING RATE [KG/HA]	TOTAL AREA [HA]
Very low	Enter value	Enter value	1.18
Low	250	123,7	1.42
Middle	300	148,4	3.26
High	400	197,9	1.22
Very high	Enter value	Enter value	0.16
	Ø 252	Ø 124.5	7.24

2

3

Area share [%]

Very low Low Average High Very high

For sowing will need 1,055,6 kg of seed.

According to the chosen number of zones, you have to fill out the table on the right side of the screen

1. Please fill in the **TGW [g]** and **Germination [%]**
2. Please add your individual sowing densities for the different zones, it does not matter if you enter the sowing density in kernels/m² or the sowing rate kg/ha, the other size will be calculated automatically
3. The graph shows the percentage area distribution of the density zones. In addition directly underneath the graph you can find the total number of seeds in kg

4. How to use the tool – Download map



The screenshot shows the KWS My Fields tool interface. The top navigation bar includes links for Products, Consulting, Innovation, Company, and Careers, along with a search bar and a user profile icon. The sidebar on the left shows the 'My fields' section with a table of fields. The main map area displays a sowing map with colored zones. The 'EXPORT PRESCRIPTION MAP' button is highlighted with a green circle with the number 2. The 'Export your sowing data' dialog box is shown with a green circle with the number 3. The 'DOWNLOAD' button is highlighted with a green circle with the number 4.

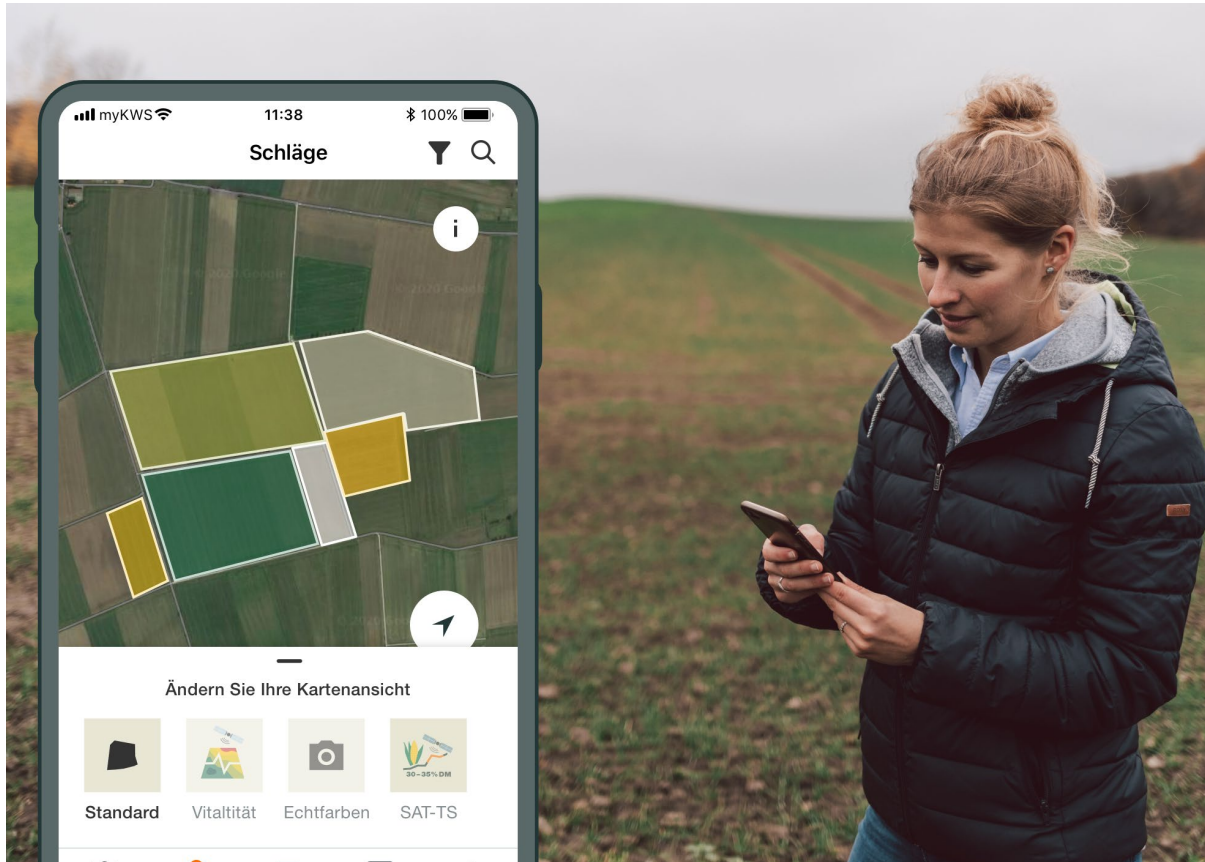
FIELD NAME	AREA
Plusterwine Farm	5.78 ha
VRS	7.23 ha
VRS UK 1	11.85 ha

We are now ready to download the map, for this you have to follow the next steps:

1. “ **Select fields** ” you want to download
2. Click “**Export your sowing map**”, in the right side of the screen
3. A new window will appear with the title “Export your sowing data”, from here you must select the right terminal
3. Click “ **Start Download** ” and you will be ready to have your sowing map
4. In addition you can download the sowing info as PDF document

Variable rate sowing

What can you find in this manual?



1

General Information

General explanation on the tool - Full registration for the tool - myKWS Registration

2

Activation of your hectares

A KWS representative will get in contact with you and give you a Boucher for a certain amount of hectares.

3

Customize your Field

How to create a field and specify certain parameters so the tool can work properly

4

How to use the tool

How to export the sowing map in order to be able to use the tool

5

What to expect after

After you have the map and finish the process, what to expect from it?



What happens next?

After downloading the sowing map for the correct terminal, you should store the file on a flash drive. With this flash drive you can import the sowing plan on the terminal. To start the sowing job on the terminal please follow the terminal specific instructions.

QUESTIONS OR SUGGESTIONS?



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