

# Ag-Technology digital in mediaTUM®

- State-of-the-Art -

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 Germany

*University of Sao Paulo*  
 October 9, 2019  
**Piracicaba**  
 Brazil

- User: Guest Login
- Search in AgTecCollection / Images Search
- Advanced search mediaTUM Gesamtbestand - Kollektionen - AgTecCollection / Bilder und Schriften Landtechnik
- mediaTUM Content
    - University Bibliography
    - Collections
      - Electronic Examination Papers
      - Open Access Publikationen
      - Architekturmuseum - Collection
      - AgTecCollection / Images and Documents Agricultural Engineering
        - Images
        - Documents
        - Movies, Videos, Voice Recordings
        - Research Data
          - Agriechatronics / TUM
          - ATB-Collection
          - CoTeSys / Cognition for Technical Systems
          - SFB 768 / Cycle Management of Innovation Processes
          - IntegraTUM
          - Project Architecture
          - MICCAI 2015
          - TUM University Press
          - Research Data
          - Institutions
          - Help



**Images**

[AgTecCollection / Images and Documents Agricultural Engineering](#)

**Maintenance Unit:** Chair of Agricultural Systems Engineering (Prof. em. Dr. Hermann Auernhammer), Center of Life Sciences, Technische Universität München (TUM)

**General Information:** All material in the AgTecCollection originally comes from the Chair of Agricultural Systems Engineering at the Center of Life Sciences TUM. Also material from the Chair of Agricultural Engineering at the Faculty of Mechanical Engineering Garching TUM is included. Finally, based on a cooperation contract, slides in black&white from the Humboldt-Universität at Berlin (HUB) are shown

**Content:** In the end the collection will have more than 50,000 images from the whole area of agricultural, horticultural, orchard and vitery, including as pdf-files. Additionally first movies & videos from tests and investigation as well as data from completed research projects will be included. The content will be structured in 10-12 subcollections. The first release will contain more than 46,000 images, more than 900 documents, first movies & videos and resarch data available for download (as in January 2019)

**Retrieval:** May be done (1) through the classification system (**now all folder names in English**), (2) a full-text search in the "Search field" or (3) a specified search using **Type, Title, Keywords (now all in English), Authors, Brand, Color, Source and Language** in a single or multiple way in the "Advanced search" (the whole platform will be in English soon, meanwhile "Search Field Table").

New (Jan 2019): **Latest 10 Doktorat Thesis** now available with direct links to the full text. More interesting objects under **Congress Presentations, Download Statistics 2014 & 2016**, also see **Big Data** and annual activities in **Activities 2019, Activities 2018!** AutoCAD **dwg-Files now in Attachment!**

**Copyright / Copyright holders**

Even after intensive Recherche we were not able in each cases to find the copyrights of all pictures. So we ask possible copyright holders for reclamation to the University Library of TUM.

**Usage / Regulations by law**

## The dilemma ...

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**Anybody, who is unfamiliar with the history, is damned to repeat it !** (Georg Santayana: The Life of Reason, 1905).

This is true for everything and even for Agricultural Engineering, but:

- Knowledge always is obsolete as with every second we get new knowledge – the knowledge before is history then
- and historic knowledge – let say before 2005 – is of analogues matter only.

Analogues history consists of

- written material (hand written, printed, ...) = Documents
- figuratively gathered objects (drawings, pictures, photos, movies, ... ) = Images

**But today we are living in a digital world.  
We are damned to digitize the history !**

# Transition into the digital world

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**In Ag Engineering since the twenties of the last century slides were dominant** (used for documentation, visualization and for bringing the real world into the class room)

- In the last 80ies the overhead transparencies came up (still analogues)
- Followed in the new century by PowerPoint (needed material must be digitized) with some questions:
  - What shall be digitized (everything or only what is needed for use) ?
  - What's to do with the un-digitized slides ?
  - What's to do with the slides at all ?
  - What are we doing with the adjacent material and/or objects ?
  - What are we doing with written material of a laboratory like yours (study works, thesis, internal or public lab journals, research data, others) ?
  - Where to we store the digitized material ?
  - Who will have access (e.g. to internal images and documents) ?
  - And so on, and so on ?

# AgTecCollection – A short overview

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All those questions came up in our lab with the transition from the transparency overheads to PowerPoint (a lot of material at that time still was only available in slides)

- 2001 For the first time we discussed the consideration of digitizing all existing slides (roughly estimated more than 50,000)
- 2002 A first tests with about 1,000 slides and an EXCEL-acquisition sheet in an „unrestricted keyword list“ was established
- 2003 The library of our university acquired funding from the DFG (German Research Organization) for the development of an „Media Acquisition and Administration System, called **mediaTUM**<sup>®</sup>“ (as only our laboratory could provide digitized material the system development relies on Ag Engineering mainly)
- 2003 – 2005 (until today) Team mediaTUM (and me) still work on the system development and at the ascertainment of images and documents population, extended now to videos and research data

## AgTecCollection – Slide digitizer (using a linear magazine)

DigitDia 3600  
Magazin Scanner  
Reflecta GmbH  
Rottenburg  
(Germany)



Magazine with  
50 slides takes  
about 4 h



## AgTecCollection – Slide digitizer (using a carousel magazine)

Carousel magazine  
with  
100 slides  
Takes about 8 h or  
max. 300 slides/d in a  
three shift operation



## AgTecCollection – Transmitting light digitizer (HUB-slides)



UMAX U0104-HBL0  
PowerLook  
Techville, Inc. Dallas TX, USA  
6 slides/instance, about 10 min



# AgTecCollection – Slides-archiving for the TUM-Archive

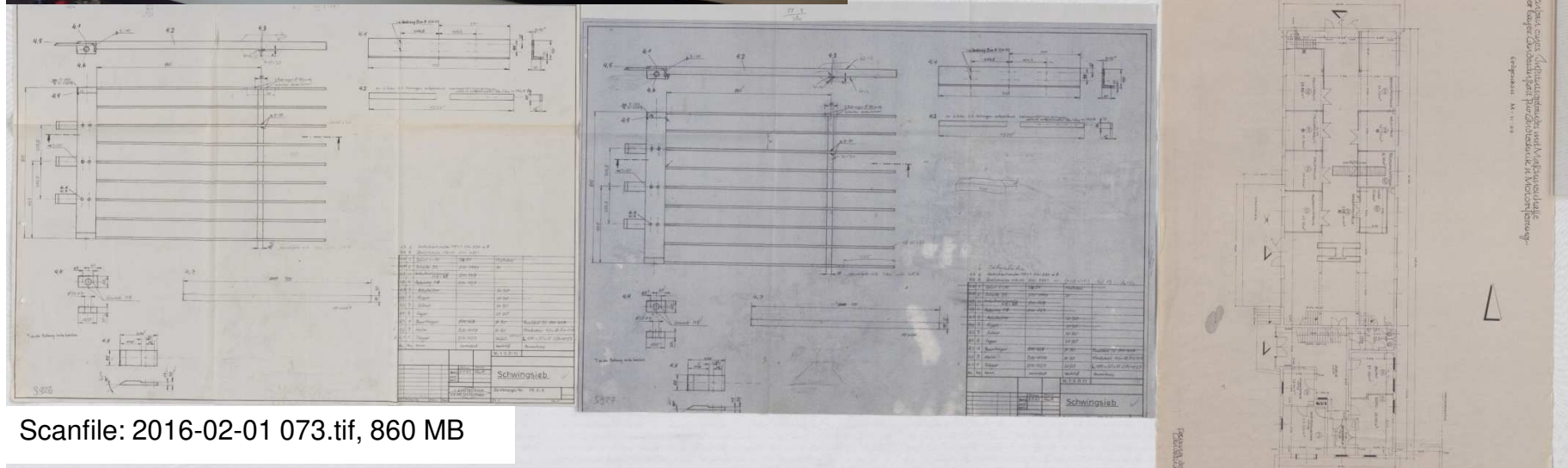




# AgTecCollection – Large format scanner (< A3 in 2016)



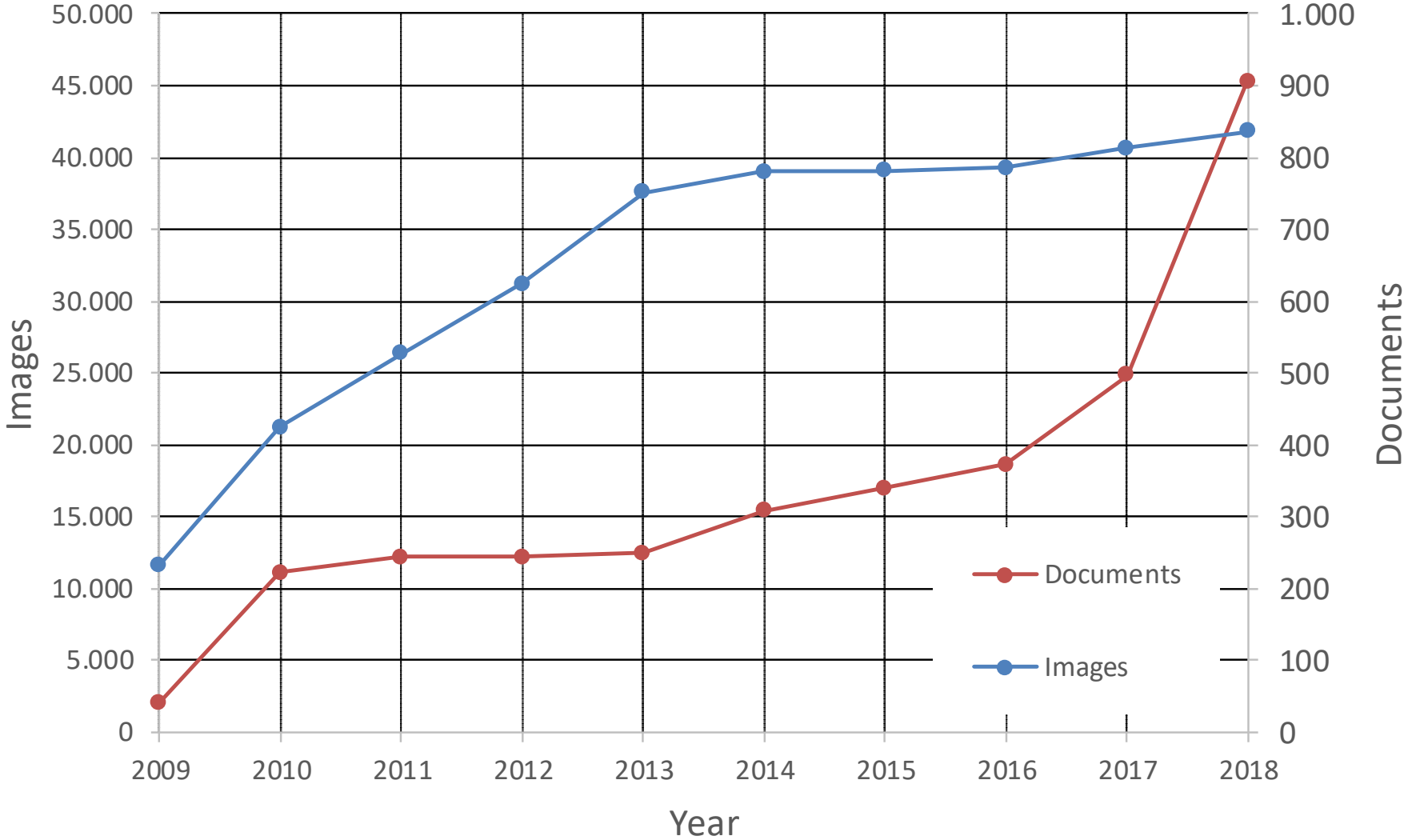
Gruse Digital Imaging Equipment  
(Architekturmuseum der TUM, DFG-finanziert)  
Typ CS 220 StE  
1900 \* 1200 mm  
300 dpi  
Scan time per placement ~ 6 min  
(including plain adjustment and removal ~ 10 min)  
A total of 1,040 drawings in 259 single  
scan placements digitised



Scanfile: 2016-02-01 073.tif, 860 MB

# AgTecCollection – Publication

## Published Images & Documents 2009 - 2018



# AgTecCollection – Object types

Published Images				
Type	Numbers	Colored	Black&white	Unicolored
Photographs	<b>30.194</b>	<b>26.428</b>	3.724	29
Schematic drawings	7.756	359	<b>6.726</b>	594
Diagrams	5.660	238	<b>4.431</b>	<b>991</b>
Tables	2.998	123	<b>2.396</b>	476
Maps	470	<b>246</b>	220	4
<b>Total</b>	<b>47.078</b>	<b>27.394</b>	<b>17.497</b>	<b>2.094</b>

Published Documents	
Type	Numbers
Theses (doctoral, diploma, master)	469
Books	1
Book contributions	53
Miscellaneous	7
Research data	1
Conference books	4
Conference papers	38
Reports	235
Papers (rev. & unrev.)	635
Documents without specification	108
<b>Total</b>	<b>1.551</b>

# AgTecCollection – *A presentation for you*

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## Today we will

- see what the **AgTecCollection** in mediaTUM looks like,
- see how we get **access** to the system,
- learn about the **structure** of the collection,
- do a **simple search**,
- work with an **extended search**,
- do a **download**,
- look for a correct **citation** and
- have a view into the **visit and download statistics**

**AgTecCollection in mediaTUM®:**

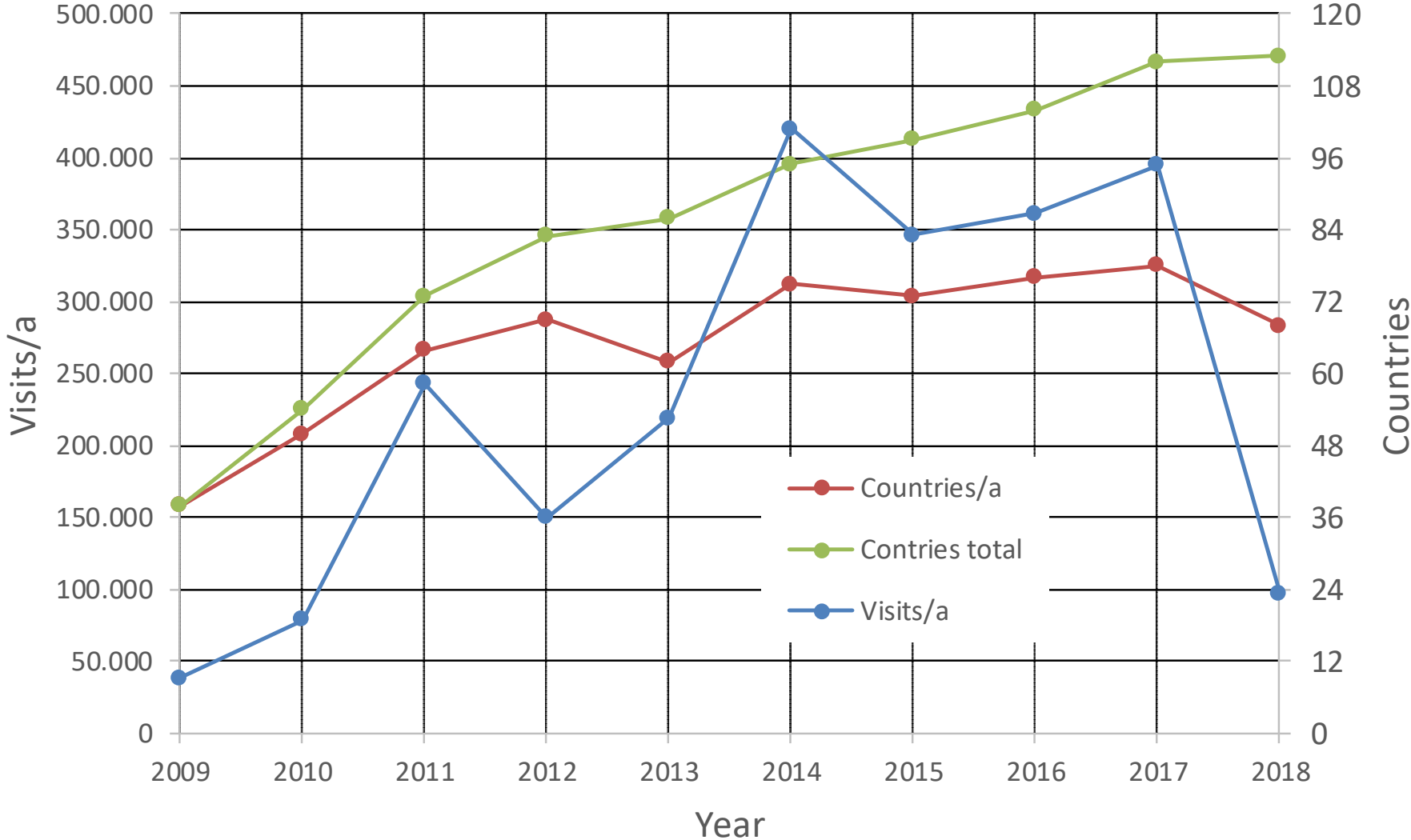
<http://mediatum.ub.tum.de/actecollection>



1. Go to AgTecCollection (<http://mediatum.ub.tum.de/agteccollection>) and explain the overall structure with Images, Documents, Movies & Videos” and “Research Data”
2. Show DWG-File attachments in activities|
3. Go to folder “Vehicles” / “Tractors” / “Standard Tractors”
4. Show “Presentation styles”
5. Choose “LANZ 1921” and show “Citation”, explain the use of “Folder Searches”
6. Go to “Landtechnik Weihenstephan” and explain visits and downloads in the past
7. Do a “Simple Search” with “Auernhammer”, makes no sense
8. Look for “OKSANEN” (no hit) and for “MOLIN” (great = MOLINE)
9. Make an “Advanced Search” with “Keywords” / Combine Harvesters, explain before “Translation Table”
10. Add “Brand” with “CLAAS” to the search
11. Add “DEUTZ” to the search
12. Add “HANOMAG” to the search
13. Make a search with “Auernhammer”, Schematic Drawing” and “GPS”
14. Go to “Documents” and show “Authors”
15. Go to “Movies” and show “Egg Collection”
16. Got to “Research Data” and show linkage to “Presentations” and Archive”
17. Back to “PPT Presentation”

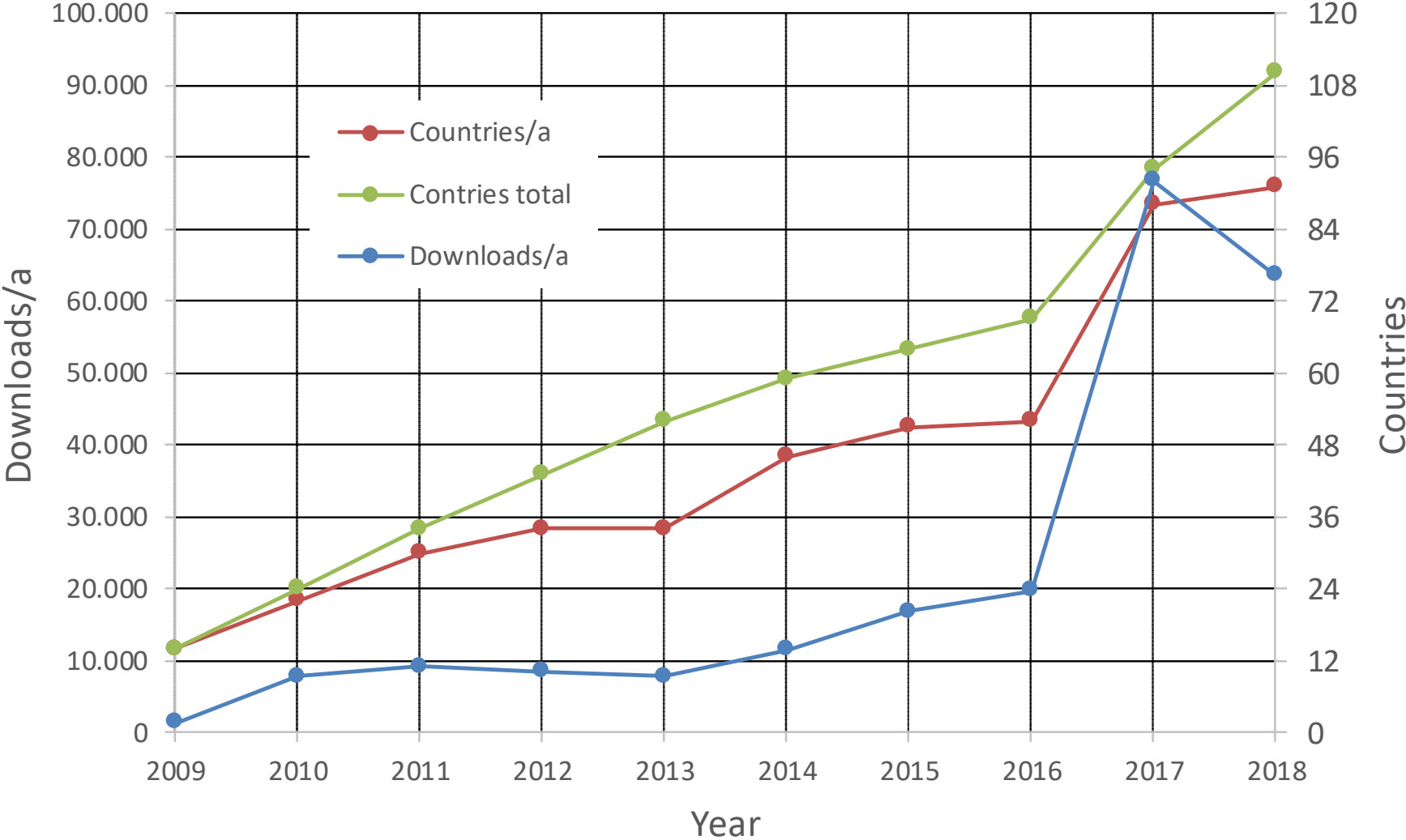
# AgTecCollection – Acceptance

## AgTecCollection Visits 2009 - 2018

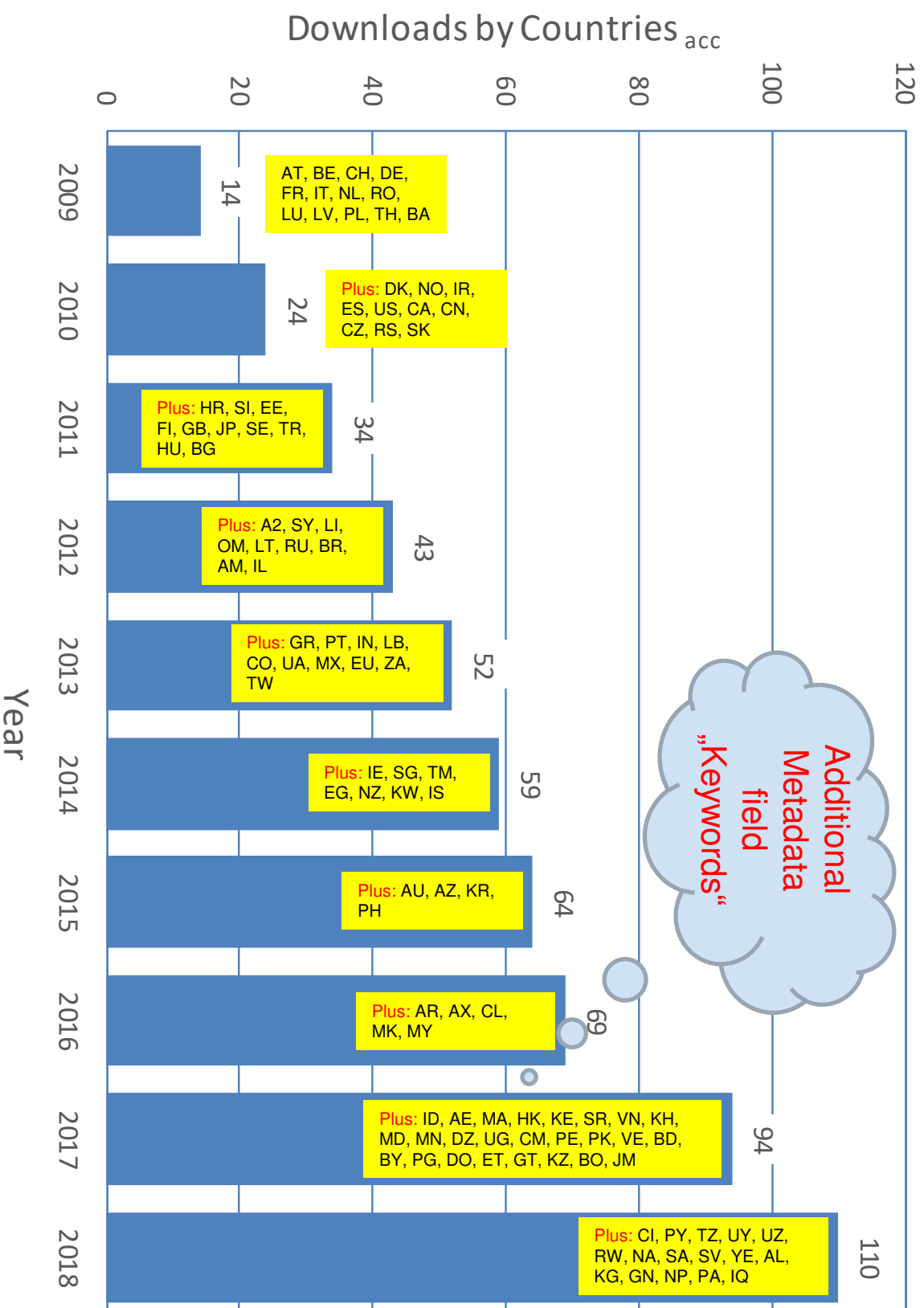


# AgTecCollection – Usage

## AgTecCollection Downloads 2009 - 2018



# AgTecCollection – Downloads by countries





## AgTecCollection – Downloads & ranking by countries


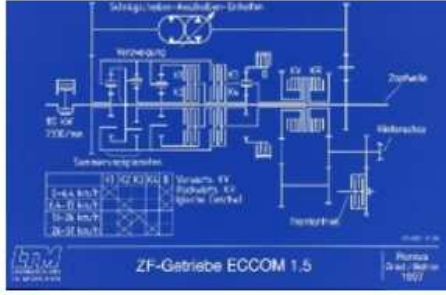


<i>Rank</i>	<i>Code</i>	<i>Country</i>	<i>Months</i>	<i>Downloads</i>	<i>%</i>
1	n.a.	Not addressable	110	161,946	38.29
2	DE	Germany	111	156,251	36.95
3	US	United States	83	61,849	14.62
4	AT	Austria	108	15,975	3.78
5	CN	China	34	3,981	0.94
6	CH	Switzerland	95	3,462	0.82
7	NL	Netherlands	98	3,004	0.71
8	PL	Poland	89	2,068	0.49
9	GB	Great Britain (UK)	55	1,299	0.31
10	OM	Oman	4	1,223	0.29
11	BE	Belgium	62	1,218	0.29
12	UA	Ukraine	28	997	0.24
13	IT	Italy	78	994	0.24
14	GR	Greece	29	992	0.23
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
110	IQ	Iraq	1	1	0.00

# AgTecCollection – Download frequency by countries

Rank	Code	Country	Downloads	Months	%
1	DE	Germany	156,251	111	100.00
2	n.a.	Not addressable	161,946	110	99.09
3	AT	Austria	15,975	108	97.29
4	NL	Netherlands	3,004	98	88.28
5	CH	Switzerland	3,462	95	85.58
6	PL	Poland	2,068	89	80.18
7	US	United States	61,849	83	74.77
8	IT	Italy	994	78	70.27
9	CA	Canada	976	65	58.55
10	LU	Luxembourg	519	65	58.55
11	BE	Belgium	1,218	62	55.85
12	FR	France	933	59	53.15
13	GB	Great Britain (UK)	1,299	55	49.54
14	RO	Romania	604	54	48.64
15	FI	Finland	231	49	44.14
16	HU	Hungary	518	48	43.24
17	SI	Slovenia	198	46	41.44
18	HR	Croatia (Hrvatska)	162	45	40.54
...	...	...	...	...	...


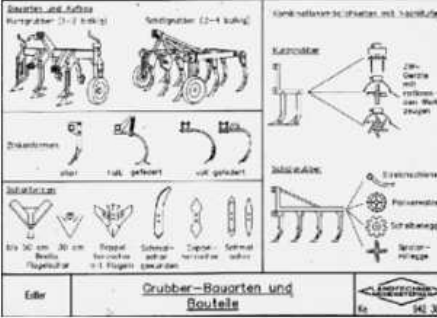


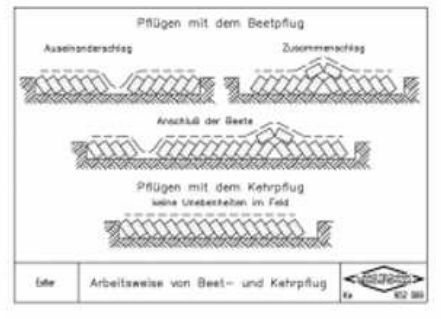
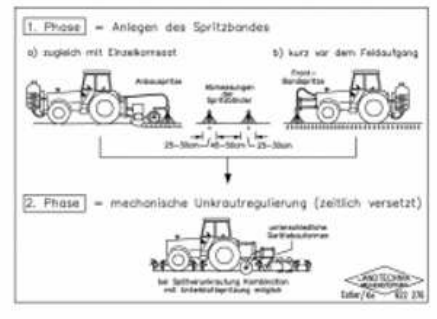
Download time 2009-10 to 2018-12 = 111 months = 100 %

# AgTecCollection – Top-4 downloads “Renius”

<i>Bild / Image</i>	<i>Download Info</i>	<i>Bild / Image</i>	<i>Download Info</i>
	<p>Rang 0001            ScanFile 00036613.tif            ID=00717109, DL=571            2014 _ AT=1, CA=2, CH=2,            DE=111, DK=1, IN=1, LU=1,            NL=1, NO=1, US=4            2015 _ AT=3, CH=3, CN=3,            DE=132, GB=2, KW=1, NL=1,            TR=3, US=3            2016 _ DE=254, US=21,            CH=5, AT=5, CA=5, NL=3,            RU=2</p>		<p>Rang 0002            ScanFile 00037652.tif            ID=00718066, DL=131            2014 _ DE=3, SE=1            2015 _ AT=1, DE=26, FR=3,            IT=1, PH=1            2016 _ DE=72, US=4, PL=1,            AT=4, FR=1, NL=6, CZ=1,            SI=1, RS=1, JP=3, TR=1</p>
	<p>Rang 0003            ScanFile 00036717.tif            ID=00717209, DL=127            2014 _            2015 _            2016 _ CN=127</p>		<p>Rang 0004            ScanFile 00040339.tif            ID=00720540, DL=109            2014 _ CZ=1, DE=7, GR=1,            HR=1, PL=2, RO=2, US=1            2015 _ DE=20, IT=1, LT=1,            LV=2, PL=2, RU=1            2016 _ DE=55, PL=1, RO=6,            AT=1, SK=1, CZ=1, SI=1, HU=1</p>

Download time analyzed 2014-01 to 2016-12

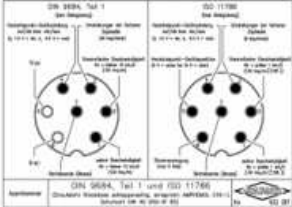


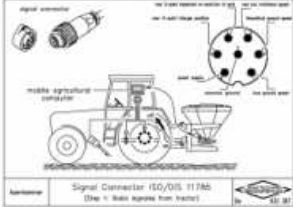
# AgTecCollection – Top-6 downloads “Estler”

Bild / Image	Download Info	Bild / Image	Download Info
	<p>Rang 0001                      ID= 711771, DL=103                      2014 _ DE=12                      2015 _ AT=2, CA=1, DE=38                      2016 _ DE=46, US=3, CN=1</p>		<p>Rang 0002                      ID= 14639, DL=93                      2014 _ DE=16                      2015 _ AT=9, CH=2, DE=23, LI=1, US=2                      2016 _ DE=36, CH=2, AT=2</p>
	<p>Rang 0003                      ID= 712992, DL=64                      2014 _ DE=1; PL=1                      2015 _ DE=21                      2016 _ DE=38, US=1, CH=1, AT=1</p>		<p>Rang 0004                      ID= 12435, DL=57                      2014 _ DE=6                      2015 _ DE=16, HU=1, NL=2                      2016 _ DE=29, PL=1, BG=2</p>
	<p>Rang 0005                      ID= 712631, DL=57                      2014 _ AT=4; DE=5                      2015 _ AT=2, DE=20, LI=1, LU=2, US=1                      2016 _ DE=21, US=1</p>		<p>Rang 0006                      ID= 700673, DL=49                      2014 _ CH=1; DE=3                      2015 _ AT=2, CH=3, DE=10, LU=1, RO=1                      2016 _ DE=24, PL=1, AT=3</p>

Download time analyzed 2014-01 to 2016-12



# AgTecCollection – Top-4 downloads “Auernhammer”

Bild	Metadaten	Bild	Metadaten
	<p>Rang 0001                      ID= <a href="#">716664</a>, DL=525                      2014 _ AT=4, BE=1, CH=3,                      CZ=1, DE=83, DK=4, EE=3,                      ES=1, FI=1, FR=3, GB=3, IT=1,                      JP=1, NL=4, NZ=1, PL=2,                      SE=1, US=1, ZA=3                      2015 _ AT=39, AU=2, BE=9,                      CH=16, CZ=2, DE=232, DK=2,                      EE=1, ES=6, FI=13, FR=10,                      GB=5, HU=4, IT=4, LT=1,                      NL=18, NO=2, NZ=2, PL=12,                      RO=4, RU=2, PH=5, SI=2,                      TR=1, US=10                      2016 _ )</p>		<p>Rang 0002                      ID= <a href="#">708251</a>, DL=400                      2014 _ AT=3, BR=2, DE=111,                      FR=2, GB=1, IE=1, RU=1,                      US=10                      2015 _ A2=2, AT=7, CH=2,                      DE=88, FR=1, HU=1, IT=2,                      TR=1, US=3                      2016 _ AT=12, CH=3,                      DE=145, GB=1, US=1</p>
	<p>Rang 0003                      ID= <a href="#">730653</a>, DL=344                      2014 _ CH=1, DE=24, PL=1,                      US=1                      2015 _ AT=3, DE=87, NL=1,                      RO=2                      2016 _ AT=3, BE=1, DE=208,                      LU=1, US=11</p>		<p>Rang 0005                      ID= <a href="#">710156</a>, DL=150                      2014 _ AT=1, BE=1, CA=1,                      CZ=5, DE=18, DK=1, EE=1,                      NL=3, NZ=1                      2015 _ AT=8, BE=2, DE=24,                      DK=3, FI=6, FR=2, IT=1, LT=1,                      NL=5, PL=4                      2016 _ AT=5, CH=1, CZ=2,                      DE=42, FR=2, HR=1, IT=1,                      LT=1, NL=1, RO=3, SK=1,                      US=2</p>

Download time analyzed 2014-01 to 2016-12

# AgTecCollection – Further activities

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Additional publishing (upload with EXCEL collected metadata already done):

- Remaining black & white photographs ( $\approx$  2,500, showing horse to tractor and tied-up stalls to free housing systems from 1955-1968)
- Remaining drawings from the drawing office ( $\approx$  9,500, all of them manually created before 1990)
- Remaining publications ( $\approx$  500, reports and conference papers)

Publication of research data:

- Agricultural work science (Program LISL)
- Yield measurement data (1990 to 2005 in FAM and IKB-Dürnast)

Integration into an umbrella “Catalogue System” (pilot project):

- AgTecCollection
- ATB-Collection
- Landtechnik (KTBL)
- Others from Europe