# Ag-Technology digital in mediaTUM®

## - State-of-the-Art -

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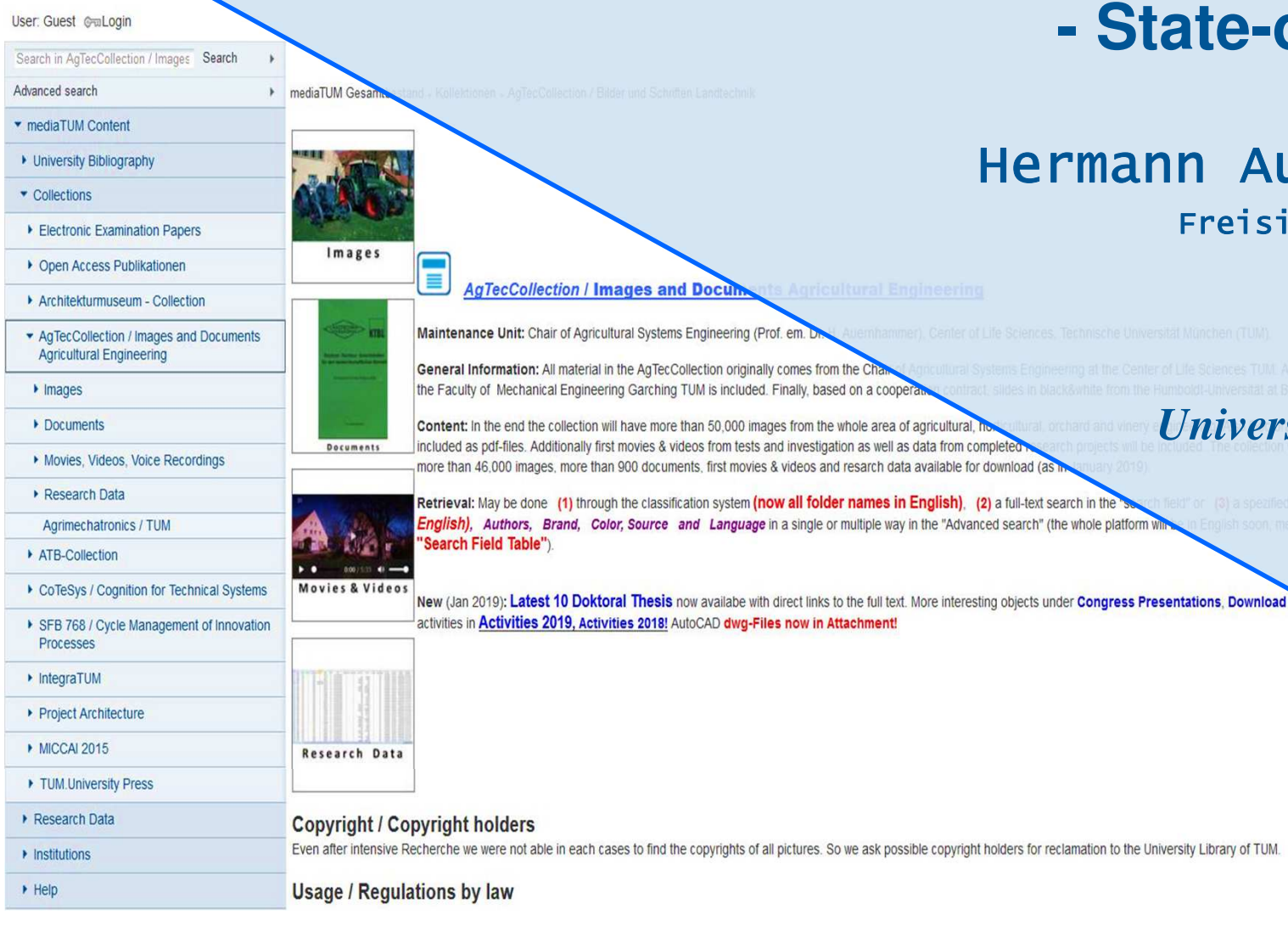
***Piracicaba***
***Brazil***



# The dilemma ...

**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- Knowledge always is obsolete as with every second we get new knowledge – the knowledge before is history then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

**In Ag Engineering since the twenties of the last century slides where 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

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®“ (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)

# AgTecCollection – Slide digitizer (using a carousel magazine)

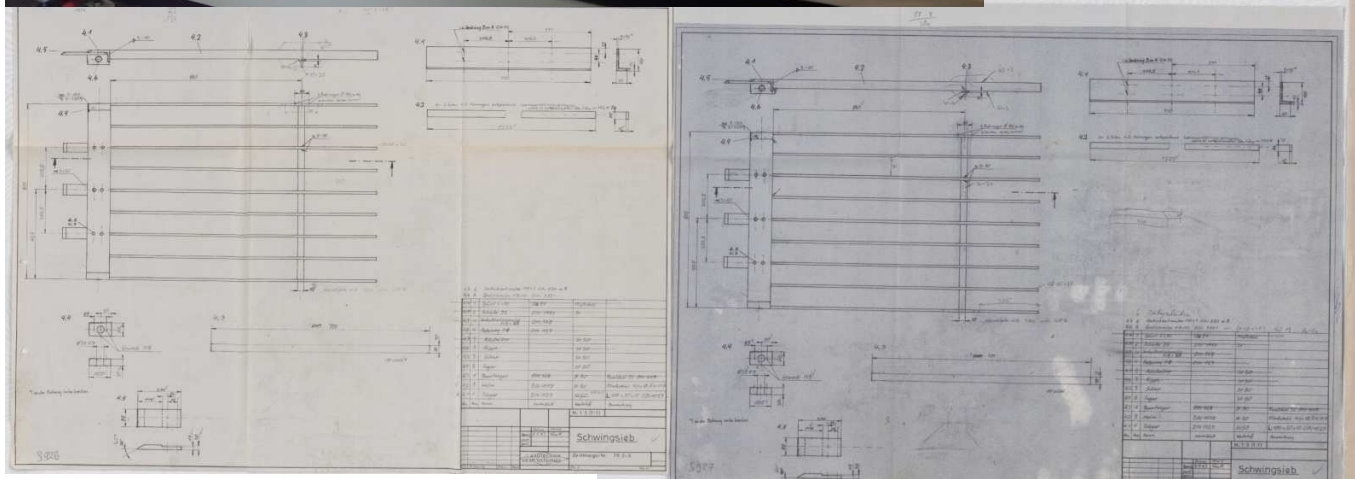
# AgTecCollection – Transmitting light digitizer (HUB-slides)

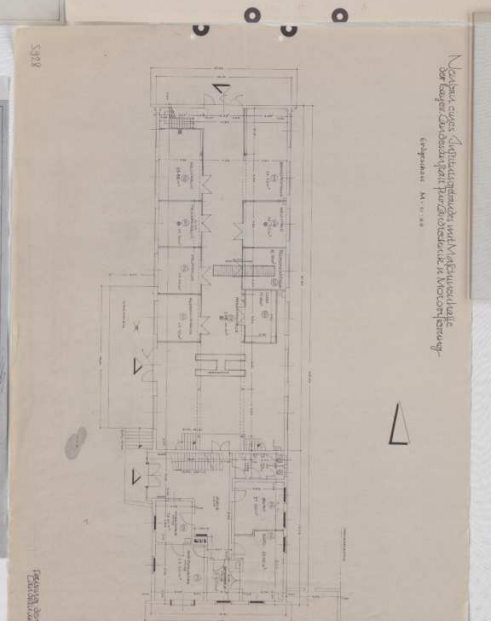
# AgTecCollection – Slides-archiving for the TUM-Archive

# 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)

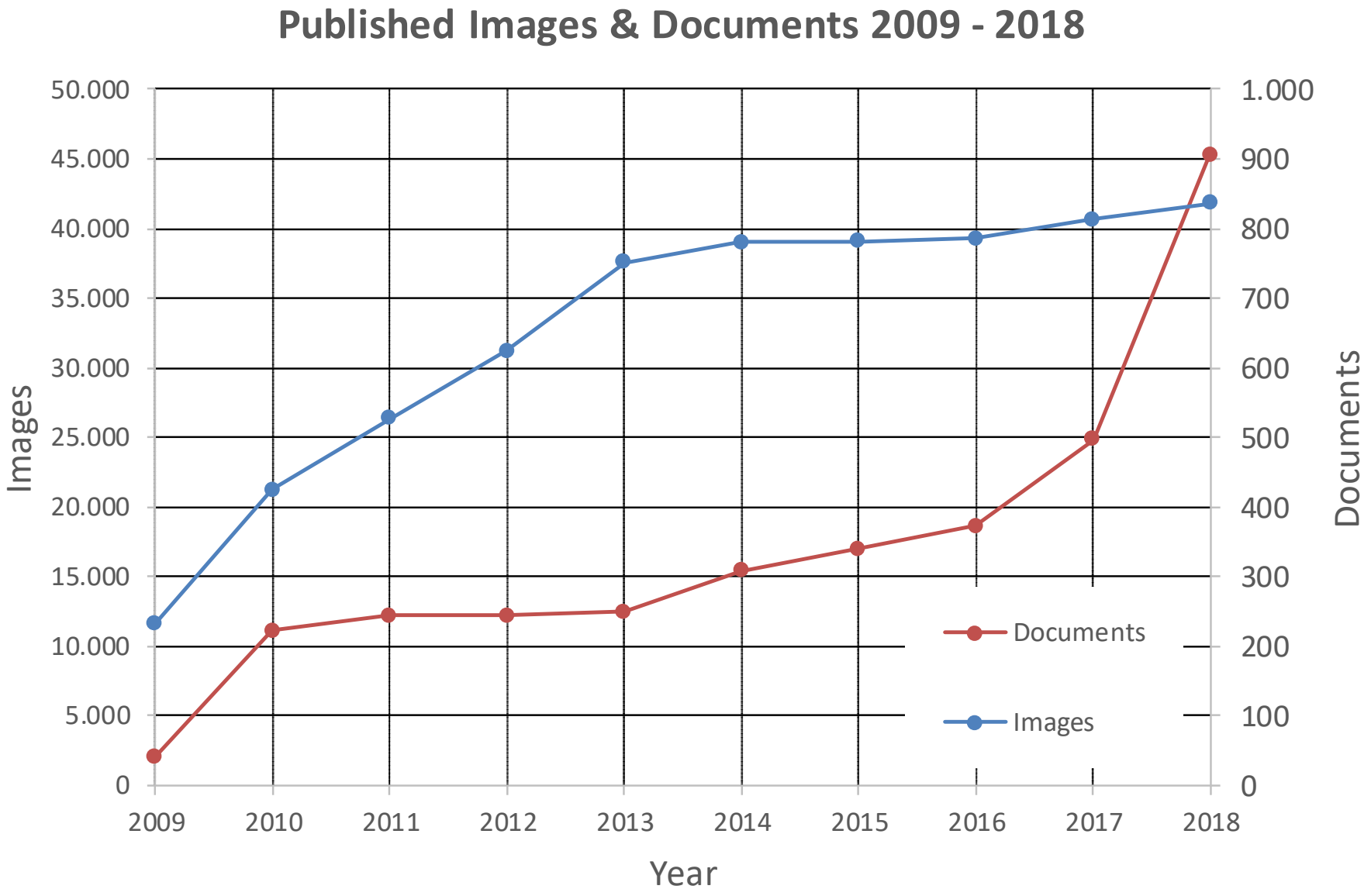
A total of 1,040 drawings in 259 single scan placements digitysed



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

# AgTecCollection – Publication



# AgTecCollection – Object types

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

| 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 spezification | 108 |
| Total | 1.551 |

# AgTecCollection – *A presentation for you*

**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**

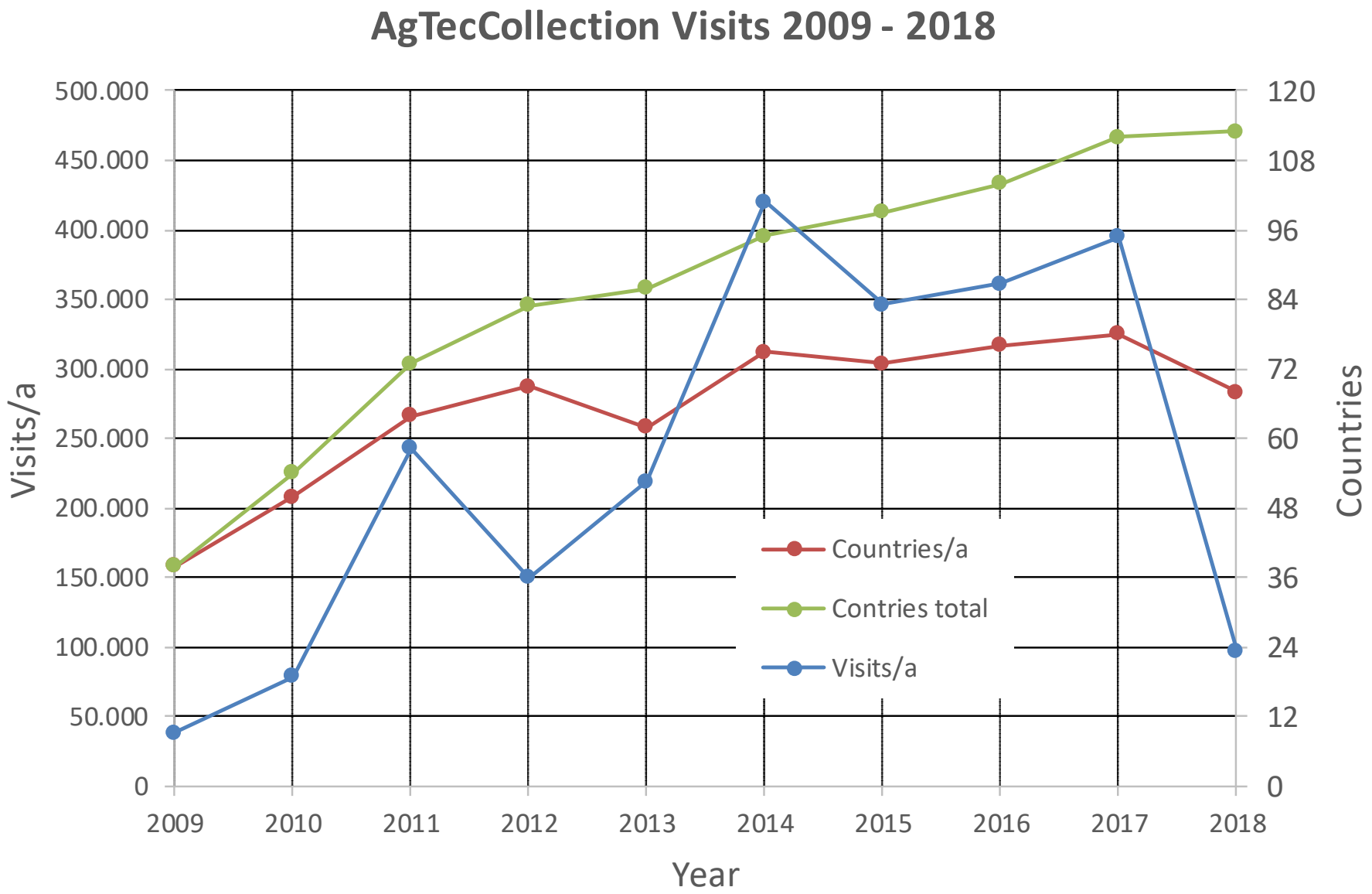
**AgTecCollection in mediaTUM®:**

http://mediatum.ub.tum.de/acteccolletion

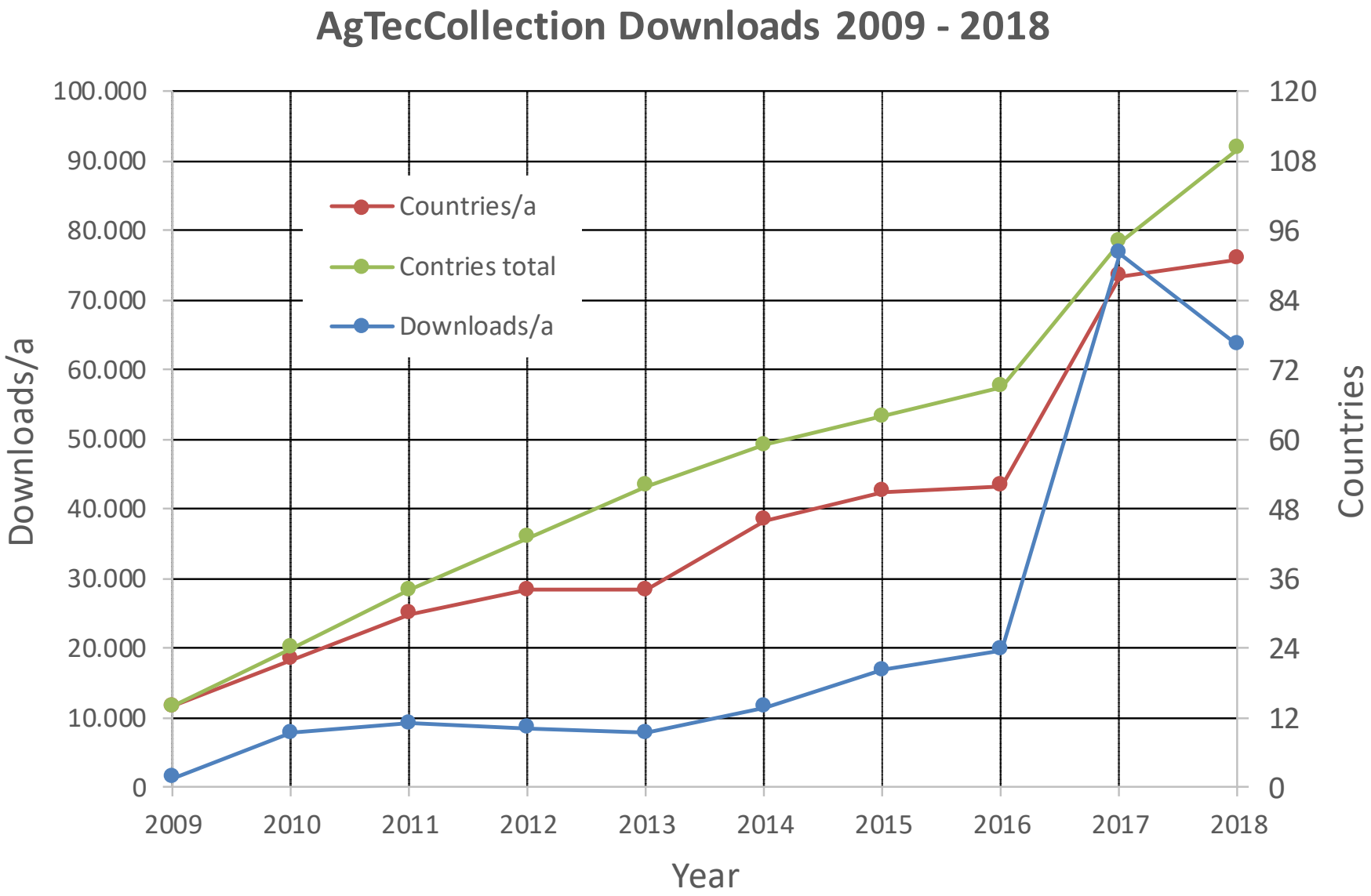
# AgTecColle

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"

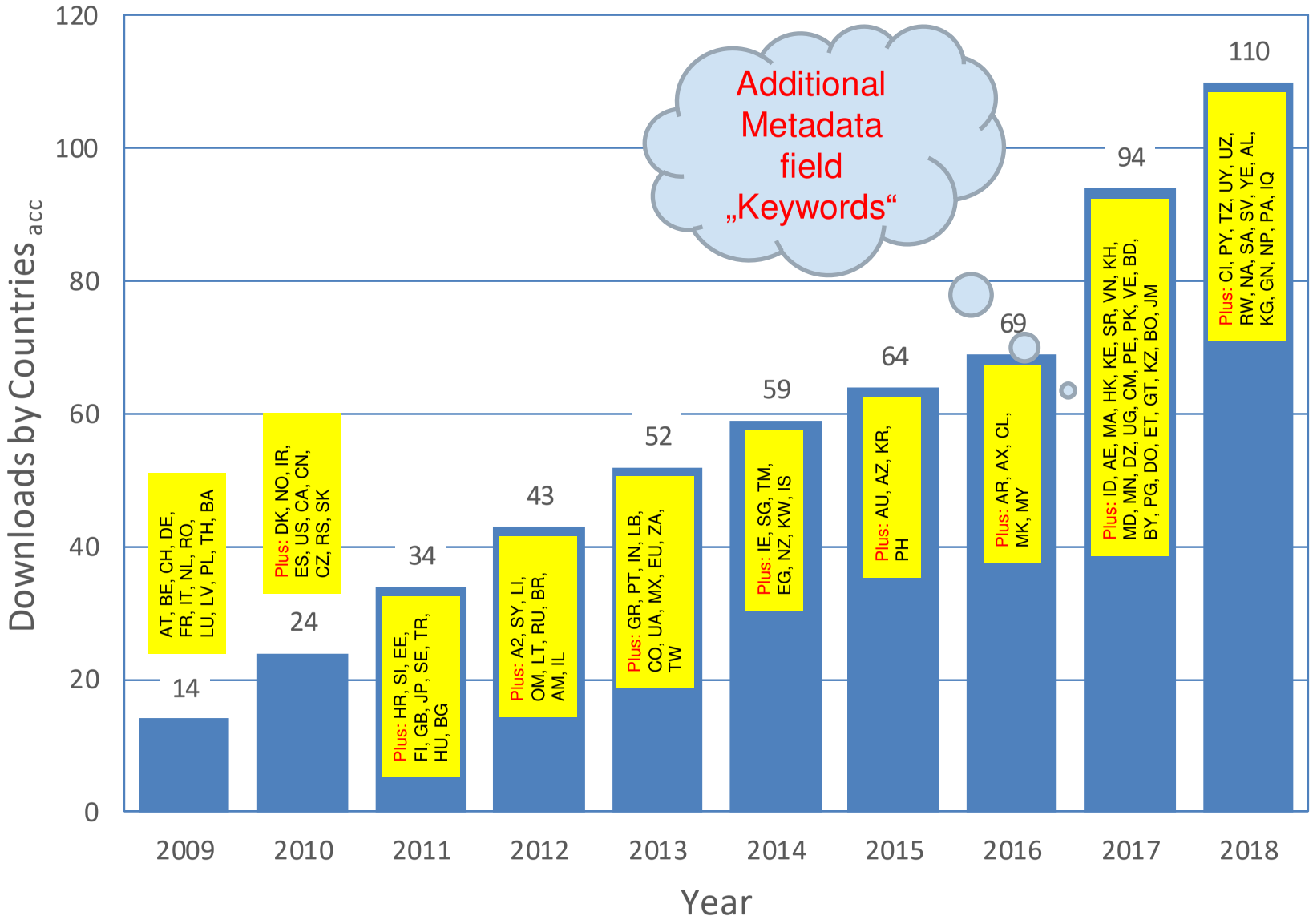
# AgTecCollection – Acceptance



# AgTecCollection – Usage



# AgTecCollection – Downloads by countries



# AgTecCollection – Downloads & ranking by countries

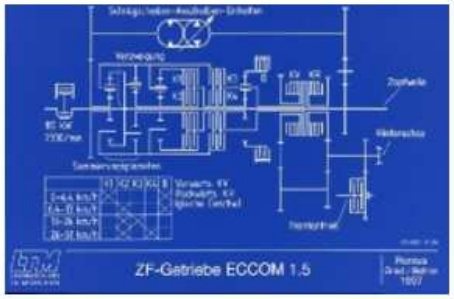
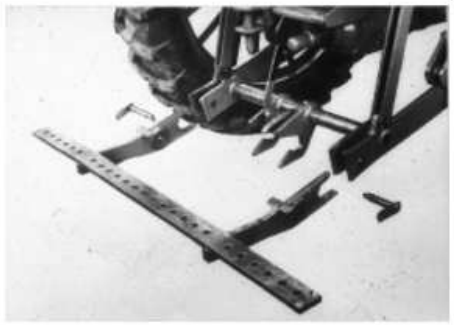
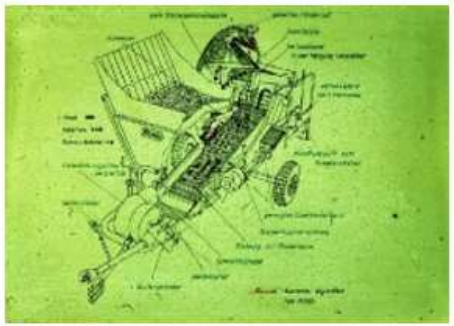
| *Rank* | *Code* | *Country* | *Months* | *Downloads* | *%* |
|---|---|---|---|---|---|
| 1 | n.a. | Not addressable | 110 | 161,946 | 38.29 |
| 2 | DE | Germany | 111 | 156,251 | 36.95 |
| 3 | US | United States | 83 | 61,849 | 14.62 |
| 4 | AT | Austria | 108 | 15,975 | 3.78 |
| 5 | CN | China | 34 | 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 |
| … | … | … | … | … | … |

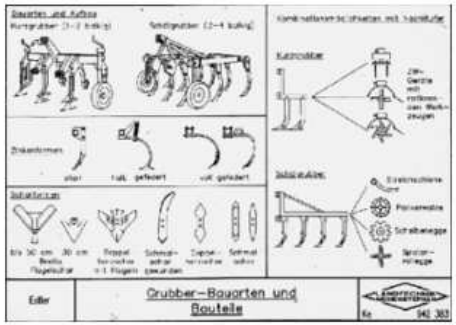
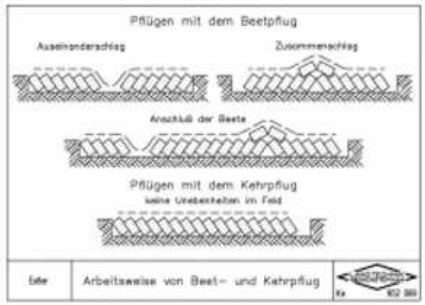
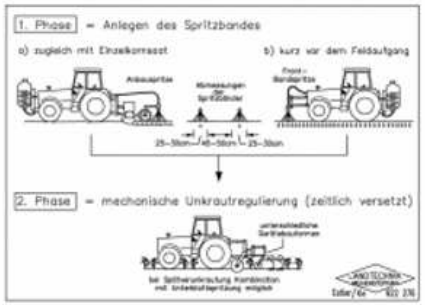
Download time 2009-10 to 2018-12 = 111 months = 100 %

# AgTecCollection – Top-4 downloads “Renius”

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

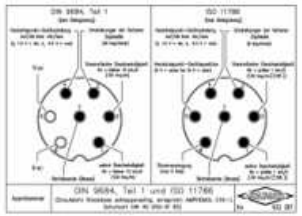
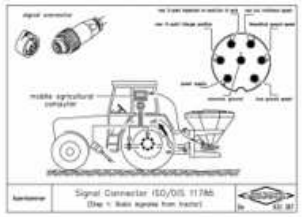
Download time analyzed 2014-01 to 2016-12

# AgTecCollection – Top-6 downloads “Estler”

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

Download time analyzed 2014-01 to 2016-12

# AgTecCollection – Top-4 downloads “Auernhammer”

| Bild | Metadaten | Bild | Metadaten |
|---|---|---|---|
|  | Rang 0001<br>ID= 716664, DL=525<br>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<br>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<br>2016 _ ) |  | Rang 0002<br>ID= 708251, DL=400<br>2014 _ AT=3, BR=2, DE=111, FR=2, GB=1, IE=1, RU=1, US=10<br>2015 _ A2=2, AT=7, CH=2, DE=88, FR=1, HU=1, IT=2, TR=1, US=3<br>2016 _ AT=12, CH=3, DE=145, GB=1, US=1 |
|  | Rang 0003<br>ID= 730653, DL=344<br>2014 _ CH=1, DE=24, PL=1, US=1<br>2015 _ AT=3, DE=87, NL=1, RO=2<br>2016 _ AT=3, BE=1, DE=208, LU=1, US=11 |  | Rang 0005<br>ID= 710156, DL=150<br>2014 _ AT=1, BE=1, CA=1, CZ=5, DE=18, DK=1, EE=1, NL=3, NZ=1<br>2015 _ AT=8, BE=2, DE=24, DK=3, FI=6, FR=2, IT=1, LT=1, NL=5, PL=4<br>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 |

Download time analyzed 2014-01 to 2016-12

# AgTecCollection – Further activities

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

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