A01C

PLANTING; SOWING; FERTILISING (combined with general working of soil A01B 49/04; parts, details or accessories of agricultural machines or implements, in general A01B 51/00 - A01B 75/00; {apparatus for spreading sand or salt E01C; sowing and fertilising with aircraft B64D 1/16 - B64D 1/20})

References

Limiting references

This place does not cover:

| Combined with general working of soil | A01B 49/04 |
| Sowing and fertilizing with aircraft   | B64D 1/16 - B64D 1/20 |

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Parts or accessories of agricultural machines or implements, in general | A01B 51/00 - A01B 75/00 |
| Apparatus for spreading sand or salt | E01C |

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

| Plant | Any of a kingdom (Plantae) of multicellular eukaryotic mostly photosynthetic organisms typically lacking locomotive movement or obvious nervous or sensory organs and possessing cellulose cell walls. |

A01C 1/00

Apparatus, or methods of use thereof, for testing or treating seed, roots, or the like, prior to sowing or planting (chemicals therefor A01N 25/00 - A01N 65/00 {irradiation in general B01J 19/08})

Definition statement

This place covers:

General methods and apparatuses for treating seeds, involving mechanical means.

Relationships with other classification places

Aspects relating directly to chemical treatments or chemical formulations are classified in the appropriate chemical groups.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Chemicals for testing or treating seed, roots | A01N 25/00 - A01N 65/00 |
| Irradiation in general | B01J 19/08 |
Sampling of (parts of) seeds for testing

A01C 1/02
Germinating apparatus; Determining germination capacity of seeds or the like (germinating in preparation of malt C12C 1/027)

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

A01C 1/025
{Testing seeds for determining their viability or germination capacity}

Definition statement
This place covers:
Testing, but not obtaining samples for testing, whereby the testing for viability is non-destructive.

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

A01C 1/046
{Carrier compositions}

References
Limiting references
This place does not cover:
No chemical compositions or formulas classified in this group. Only the composition in respect of disposition of layers and similar, or materials used.

A01C 1/06
Coating or dressing seed {encapsulated embryos or artificial seeds A01H 4/006; seed coating compositions C09D}

Definition statement
This place covers:
Mechanical means/machines, e.g. nozzles, used for coating seeds or mechanical aspects of the coating.
References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Artificial seeds</th>
<th>A01H 4/006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical coating compositions for seeds</td>
<td>C09D 133/00</td>
</tr>
</tbody>
</table>

A01C 1/08

Immunising seed

Relationships with other classification places

A01C 1/08 relates to mechanical aspects, such as machines or mechanical means for immunising, using electricity, magnetism, temperature treatments, etc., or the mechanical means for administering a chemical composition. No chemical formulas or compositions are classified in this group.

A01C 3/00

Treating manure; Manuring ([ploughs with additional arrangements for putting manure under the soil A01B 17/002]; dung forks A01D 9/00 {; treating of waste water, sewage or sludge C02F} organic fertilisers from waste or refuse C05F)

Definition statement

This place covers:

General methods for treating manure for its specific use as an agricultural input. References relevant to classification in this group.

| Liquid manure                                      | A01C 23/00 |

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Ploughs with additional arrangements for putting manure under the soil</th>
<th>A01B 17/002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dung forks</td>
<td>A01D 9/00</td>
</tr>
<tr>
<td>Treating of waste water, sewage or sludge</td>
<td>C02F</td>
</tr>
<tr>
<td>Organic fertilisers from waste or refuse</td>
<td>C05F</td>
</tr>
</tbody>
</table>

A01C 3/02

Storage places for manure, e.g. cisterns for liquid manure; Installations for fermenting manure (sewerage structures E03F 5/00; silos, bunkers E04H 7/22)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Sewerage structures                                                  | E03F 5/00  |
**A01C 3/023**

*{Digesters}*  

**References**  

*Informative references*  

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioreactors and fermenters in general</td>
<td>C12M 21/00 - C12M 99/00</td>
</tr>
</tbody>
</table>

**A01C 3/025**

*{with heat recuperation means}*  

**References**  

*Informative references*  

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioreactors and fermenters with heat exchange systems</td>
<td>C12M 21/04</td>
</tr>
</tbody>
</table>

**A01C 3/026**

*{with mixing or agitating devices}*  

**References**  

*Informative references*  

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioreactors and fermenters with mixing means</td>
<td>C12M 27/00</td>
</tr>
</tbody>
</table>

**A01C 3/028**

*{Covers, roofs or other structures for covering manure storage places (production of methane or biogas C02F 11/04; coverings for swimming or splash baths or pools E04H 4/10)}*  

**References**  

*Informative references*  

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of methane or biogas</td>
<td>C02F 11/04</td>
</tr>
<tr>
<td>Bioreactors and fermenters with production of methane or biogas</td>
<td>C12M 21/04</td>
</tr>
<tr>
<td>Coverings for swimming or splash baths or pools</td>
<td>E04H 4/10</td>
</tr>
</tbody>
</table>
A01C 3/04
Manure loaders (loaders in general B65G)

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Loaders in general | B65G |

A01C 5/00
Making or covering furrows or holes for sowing, planting or manuring

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Agricultural soil working not specifically for these purposes | A01B |

A01C 5/02
Hand tools for making holes for sowing, planting or manuring (transplanting devices for trees A01G 23/02)

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Transplanting devices for trees | A01G 23/02 |

A01C 5/045
{with piercing buckets (devices for laying-out or removing protective coverings for plants A01G 13/02)}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Devices for laying-out or removing protective coverings for plants | A01G 13/02 |
A01C 5/06
Machines for making or covering drills or furrows for sowing or planting
({seeders depositing seeds in rows A01C 7/08}; ploughs for making ridges A01B 13/02; {lifting devices for agricultural machines A01B 63/00})

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Group Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeders depositing seeds in rows</td>
<td>A01C 7/08</td>
</tr>
<tr>
<td>Ploughs for making ridges</td>
<td>A01B 13/02</td>
</tr>
<tr>
<td>Lifting devices for agricultural machines</td>
<td>A01B 63/00</td>
</tr>
</tbody>
</table>

Special rules of classification
All aspects not covered in subgroups of A01C 5/06 are classified here. A single document can have a group symbol in more than one of the subgroups, if the respective relevant information is covered by them.

A01C 5/068
{Furrow packing devices, e.g. press wheels}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Group Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth regulating wheels</td>
<td>A01C 7/203</td>
</tr>
</tbody>
</table>

A01C 7/00
Sowing ({with centrifugal wheels A01C 17/00} arrangements for driving working parts A01C 19/00)

References
Limiting references
This place does not cover:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Group Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sowing with centrifugal wheels</td>
<td>A01C 17/00</td>
</tr>
</tbody>
</table>

Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Group Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangement for driving working parts of seeders</td>
<td>A01C 19/00</td>
</tr>
</tbody>
</table>
A01C 7/006

{Minimum till seeding}

Definition statement

This place covers:
Tool or combinations of tools minimum till sowing techniques.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Combination of soil working tools for planting | A01B 49/06 |

Special rules of classification

Specific details about the soil cutting or furrowing tools are additionally classified in the corresponding group under the subclass A01B.

A01C 7/02

Hand sowing implements {fertiliser distributors for hand use A01C 15/02; tools for cultivation A01G 20/30, A01G 20/40}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Fertiliser distributors for hand use | A01C 15/02 |
| Tools for cultivation | A01G 20/30, A01G 20/40 |

A01C 7/04

Single-grain seeders with or without suction devices {regulation A01C 7/10; for quantities of seed A01C 7/18}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Devices for adjusting the seed-box; Regulation of machines for depositing quantities at intervals | A01C 7/10 |
| Machines for depositing quantities of seed at intervals | A01C 7/18 |
A01C 7/042
{using pneumatic means}

References
Informative references

Attention is drawn to the following places, which may be of interest for search:

| Aspects of pneumatic seeders not related to the singulating of seeds | A01C 7/081 |

A01C 7/06

Seeders combined with fertilising apparatus ({conducting and depositing seed A01C 7/20; apparatus for two kinds of fertiliser A01C 15/00}; combinations with soil working tools A01B 49/04)

References
Informative references

Attention is drawn to the following places, which may be of interest for search:

| Conducting and depositing seed | A01C 7/20 |
| Apparatus for two kinds of fertiliser | A01C 15/00 |
| Combinations with soil working tools | A01B 49/04 |

Special rules of classification

General aspects are classified here. This group symbol must always be combined with the relevant group symbol for the particular invention (distributing system, furrowing tools, regulation, etc.)

A01C 7/081

{Seeders depositing seeds in rows using pneumatic means}

References
Informative references

Attention is drawn to the following places, which may be of interest for search:

| Particular aspects of seed singulating systems using pneumatic means | A01C 7/042 |
| Specific aspects for fertilizer distribution, i.e. distribution of powder fertilisants | A01C 15/04 |
A01C 7/082
{Ducts, distribution pipes or details thereof for pneumatic seeders (non-pneumatic seed pipes A01C 7/206)}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Non-pneumatic seed pipes | A01C 7/206 |

Special rules of classification
In this group also the relevant aspects of distribution of granular fertilizer using pneumatic means are classified.

A01C 7/105
{Seed sensors}

Definition statement
This place covers:
Sensors for counting or detecting the passage of seeds.

A01C 7/16
Seeders with other distributing devices, e.g. brushes, discs, screws, slides
{{with distributing slots A01C 15/06; with slides A01C 15/124}; with chains
A01C 15/18}

References
Limiting references
This place does not cover:

| Seeders with distributing slots | A01C 15/06 |
| Seeders with slides | A01C 15/124 |
| Seeders with chains | A01C 15/18 |

A01C 7/166
{Centrifugal distributors (pneumatic distributors A01C 15/04)}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

| Pneumatic distributors | A01C 15/04 |
A01C 7/18
Machines for depositing quantities of seed at intervals {(dibble seeders A01C 7/002; single-grain seeders A01C 7/04; regulation A01C 7/102; ridge marking A01B 69/02)}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibble seeders</td>
<td>A01C 7/002</td>
</tr>
<tr>
<td>Single-grain seeders</td>
<td>A01C 7/04</td>
</tr>
<tr>
<td>Regulation</td>
<td>A01C 7/102</td>
</tr>
<tr>
<td>Ridge marking</td>
<td>A01B 69/02</td>
</tr>
</tbody>
</table>

A01C 7/20
Parts of seeders for conducting and depositing seed {(combined with fertilising apparatus A01C 7/06)}

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts combined with fertilising apparatus</td>
<td>A01C 7/06</td>
</tr>
</tbody>
</table>

A01C 7/205
{comprising pressure regulation means}

Definition statement
This place covers:
Means for adjusting or maintaining a uniform pressure, even if they have an effect on the depth regulation.

References
Informative references
Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press wheels</td>
<td>A01C 5/068</td>
</tr>
</tbody>
</table>
A01C 7/208

{Chassis; Coupling means to a tractor or the like; Lifting means; Side markers (hoppers for seeders or spreaders A01C 15/006)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Hoppers for seeders or spreaders | A01C 15/006 |

A01C 9/00

Potato planters (planting by hand A01C 7/02; combinations with soil working tools A01B 49/04)

Definition statement

This place covers:

Planting of all types of tubers, bulbs and similar big, round shaped reproductive material.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Planting by hand | A01C 7/02 |
| Ridge forming tools | A01B 13/02 and A01B 39/14 |
| Combinations with soil working tools | A01B 49/04 |

A01C 9/04

with bucket wheels (with other distributing devices A01C 9/08)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Potato planters with other distributing devices | A01C 9/08 |
A01C 9/08

with other distributing devices, e.g. flaps, screws, horizontal turning plates {{(with bucket wheels A01C 9/04)}}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Potato planters with bucket wheels | A01C 9/04 |

A01C 11/00

Transplanting machines {{(hand sowing A01C 7/02); carriers for supporting persons A01B 75/00; transplanting devices for trees A01G 23/02}}

References

Limiting references

This place does not cover:

Machines or means for transplanting of plants or seedlings into the field, not into pots.

Planting of elongated parts of plants (like sugar cane buds).

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Hand sowing             | A01C 7/02 |
| Carriers for supporting persons | A01B 75/00 |
| Transplanting seedlings or plants into pots | A01G |
| Transplanting devices for trees | A01G 23/02 |

A01C 11/006

{Other parts or details or planting machines}

Special rules of classification

Specific aspects of transplanting machines not covered in the other subgroups, like pivoting frames, wheels, furrowing tools, etc. are classified in this group. When appropriate, documents are additionally classified in A01C 5/00 and in A01B.


**A01C 15/00**

Fertiliser distributors ([A01C 7/06](#) takes precedence; {combined with seeders [A01C 7/06](#); arrangements for driving working parts [A01C 19/00](#); {harrows with special additional arrangements [A01B 19/00](#); sand, gravel or salt spreaders for roads [E01C 19/20](#))

**References**

**Limiting references**

This place does not cover:

| Fertiliser distributors combined with seeders | A01C 7/06 |

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

| Arrangements for driving working parts | A01C 19/00 |
| Liquid fertilizers | A01C 23/00 |
| Harrows with special additional arrangements | A01B 19/00 |
| Sand, gravel or salt spreaders for roads | E01C 19/20 |

**Special rules of classification**

Control of the distribution rate, elements for pneumatic distribution of granular fertilizers, etc, are identical to the seed regulating or distributing means, and are additionally classified under [A01C 7/00](#), when appropriate.

**A01C 15/006**

{Hoppers}

**Definition statement**

This place covers:

Both this group and [A01C 15/007](#) cover also hoppers for seed.

**A01C 15/02**

for hand use {((hand sowing [A01C 7/02](#))}

**References**

**Informative references**

Attention is drawn to the following places, which may be of interest for search:

| Hand sowing | A01C 7/02 |
**A01C 15/04**

**using blowers**

**Definition statement**

*This place covers:*

Only powder fertilizers, or specific aspects different or not suitable for seeds.

**References**

*Informative references*

Attention is drawn to the following places, which may be of interest for search:

| Aspects of the pneumatic distribution of granular fertilizer | A01C 7/081 |

**A01C 15/10**

**with reciprocating pushers {or stirrers in front of the slots (with endless chains A01C 15/18)}**

**References**

*Informative references*

Attention is drawn to the following places, which may be of interest for search:

| Distributors with endless chains | A01C 15/18 |

**A01C 15/122**

{with moving floor parts (with endless chains A01C 15/18)}

**References**

*Informative references*

Attention is drawn to the following places, which may be of interest for search:

| Distributors with endless chains | A01C 15/18 |

**A01C 15/128**

{with pushers or stirrers in front of the slits (with endless chains A01C 15/18)}

**References**

*Informative references*

Attention is drawn to the following places, which may be of interest for search:

| Distributors with endless chains | A01C 15/18 |
A01C 15/14

with means for lifting out the fertiliser \{(feeding wheels, cell wheels, discs A01C 7/12, bucket wheels A01C 7/14)\}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Feeding wheels, cell wheels, discs</th>
<th>A01C 7/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucket wheels</td>
<td>A01C 7/14</td>
</tr>
</tbody>
</table>

A01C 17/00

Fertilisers or seeders with centrifugal wheels \{(hand-used implements A01C 7/02, A01C 15/02; fertiliser distributors A01C 15/00); mechanical throwing machines for articles or solid bulk materials, in general B65G 31/00; sand, gravel or salt spreaders E01C 19/20\)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Hand-used implements</th>
<th>A01C 7/02 and A01C 15/02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer distributors</td>
<td>A01C 15/00</td>
</tr>
<tr>
<td>Mechanical throwing machines for articles or solid bulk materials</td>
<td>B65G 31/00</td>
</tr>
<tr>
<td>Sand, gravel or salt spreaders for roads</td>
<td>E01C 19/20</td>
</tr>
</tbody>
</table>

A01C 17/006

\{Regulating or dosing devices\}

Definition statement

This place covers:

Dosing or regulation of the fertilizer before reaching the rotating disks, i.e. dosing shutters and devices controlling the quantity and location of fertilizer falling onto the rotating disks.

A01C 17/008

\{Devices controlling the quantity or the distribution pattern\}

Definition statement

This place covers:

Regulation of the fertilizer on or after the rotating disks, i.e. blades, chutes, plates for directing the flux of fertilizer, etc.
A01C 19/00

Arrangements for driving working parts of fertilisers or seeders ((A01C 17/005 takes precedence))

References

Limiting references

This place does not cover:

| Driving mechanisms for centrifugal spreaders | A01C 17/005 |

A01C 19/04

by a ground-engaging wheel

Special rules of classification

Also when the driving depends on the forward speed of the machine in general, even if this is not derived from a ground engaging wheel.

A01C 21/00

Methods of fertilizing, {sowing or planting} (fertilisers C05; soil-conditioning or soil-stabilising materials C09K 17/00)

Definition statement

This place covers:

Special methods for fertilizing or sowing (like planting patterns or designs), as well as the methods for calculating fertilization requirements.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| Automatic guiding of agricultural machines | A01B 69/00 |
| Precision agriculture | A01B 79/005 |
| Fertilizers | C05 |
| Soil-conditioning or soil-stabilising materials | C09K 17/00 |
A01C 23/00

Distributing devices specially adapted for liquid manure or other fertilising liquid, including ammonia, e.g. transport tanks, sprinkling wagons (watering fields in general A01G 25/00; spraying or applying liquids or other fluent materials in general B05)

References

Informative references
Attention is drawn to the following places, which may be of interest for search:

| Watering fields in general               | A01G 25/00 |
| Pulverizers for liquid pesticides       | A01M 7/00  |
| Spraying or applying liquids or other fluent materials in general | B05 |

A01C 23/006

{Distribution of liquid fertilisers by gravity flow (distribution of liquid ammonia in or on the soil A01C 23/024; under pressure A01C 23/04)}

References

Informative references
Attention is drawn to the following places, which may be of interest for search:

| Distribution of liquid ammonia in or on the soil | A01C 23/024 |
| Distribution of liquid fertilisers under pressure | A01C 23/04 |

A01C 23/022

{Continuous injection tools (devices for making drill or furrows A01C 5/066)}

References

Informative references
Attention is drawn to the following places, which may be of interest for search:

| Devices for making drill or furrows | A01C 5/066 |

A01C 23/027

{Other methods for delivering fertiliser into the soil (sowing granular fertiliser A01C 21/002; subirrigation A01G 25/06)}

References

Informative references
Attention is drawn to the following places, which may be of interest for search:

| Sowing granular fertiliser | A01C 21/002 |
| Subirrigation              | A01G 25/06  |
A01C 23/042

{Adding fertiliser to watering systems (adding insecticides or herbicides A01M 7/00)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Adding insecticides or herbicides</th>
<th>A01M 7/00</th>
</tr>
</thead>
</table>

A01C 23/045

{Filling devices for liquid manure or slurry tanks (arrangements for connecting hoses of the quick-acting type F16L 37/00)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Arrangements for connecting hoses of the quick-acting type</th>
<th>F16L 37/00</th>
</tr>
</thead>
</table>

A01C 23/047

{Spraying of liquid fertilisers (gravity flow A01C 23/006; watering gardens, fields, sports grounds or the like A01G 25/00)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

<table>
<thead>
<tr>
<th>Gravity flow</th>
<th>A01C 23/006</th>
</tr>
</thead>
<tbody>
<tr>
<td>W watering gardens, fields, sports grounds or the like</td>
<td>A01G 25/00</td>
</tr>
</tbody>
</table>