

A01C

PLANTING, SOWING, FERTILIZING (combined with general working of soil A01B49/04; parts or accessories of agricultural machines or implements, in general A01B51/00 to A01B75/00; apparatus for spreading sand or salt E01C; sowing and fertilizing with aircraft B64D1/16 to B64D1/20)

References relevant to classification in this subclass

This subclass/group 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 subclass/group, 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.
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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 A01N25/00 to A01N65/00 [N: irradiation in general B01J19/08])

Definition statement

This subclass/group covers:

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

Relationship between large subject matter areas

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

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	G01N

A01C 1/02

Germinating apparatus; Determining germination capacity of seeds or the like (germinating in preparation of malt C12C1/027)

Informative references

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

Germinating in preparation of malt	C12C 1/027
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A01C 1/025

[N: Testing seeds for determining their viability or germination capacity]

Definition statement

This subclass/group covers:

Testing, but not obtaining samples for testing, whereby the testing for viability is non-destructive.

Informative references

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

Sampling of (parts of) seeds for testing	G01N
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A01C 1/046

[N: Carrier compositions]

References relevant to classification in this group

This subclass/group 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 [N: (encapsulated embryos and artificial seeds A01H4/006)]

Definition statement

This subclass/group covers:

Mechanical means/machines, e.g. nozzles, used for coating seeds or mechanical aspects of the coating.

Informative references

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

Artificial seeds	A01H 4/006
Chemical coating compositions for seeds	C09D 133/00

A01C 1/08

Immunising seed

Relationship between large subject matter areas

[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 ([N: ploughs with additional arrangements for putting manure under the soil A01B17/002] ; dung forks A01D9/00 ; [N: treating of waste water, sewage or sludge C02F] organic fertilisers from waste or refuse C05F)

Definition statement

This subclass/group 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
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Informative references

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

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

A01C 3/02

Storage places for manure, e.g. cisterns for liquid manure; Installations for fermenting manure (sewerage structures E03F5/00; silos, bunkers E04H7/22)

Informative references

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

Sewerage structures	E03F 5/00
Silos, bunkers	E04H 7/22

A01C 3/023

[N: Digesters]

Informative references

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

Bioreactors and fermenters in general	C12M 21/00 - C12M 99/00
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A01C 3/025

[N: with heat recuperation means]

Informative references

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

Bioreactors and fermenters with heat exchange systems	C12M 21/04
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A01C 3/026

[N: with mixing or agitating devices]

Informative references

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

Bioreactors and fermenters with mixing means	C12M 27/00
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A01C 3/028

[N: Covers, roofs or other structures for covering manure storage places (production of methane or biogas C02F11/04 ; coverings for swimming or splash baths or pools E04H4/10)]

Informative references

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

Bioreactors and fermenters with production of methane or biogas	C12M 21/04
Production of methane or biogas	C02F 11/04
Coverings for swimming or splash baths or pools	E04H 4/10

A01C 3/04

Manure loaders (loaders in general B65G)

Informative references

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

Loaders in general	B65G
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A01C 5/00

Making or covering furrows or holes for sowing, planting or manuring

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
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A01C 5/02

Hand tools for making holes for sowing, planting or manuring (transplanting devices for trees A01G23/02)

Informative references

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

Transplanting devices for trees	A01G 23/02
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A01C 5/045

[N: with piercing buckets (devices for laying-out or removing protective coverings for plants A01G13/02)]

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
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A01C 5/06

Machines for making or covering drills or furrows for sowing or planting ([N: seeders depositing seeds in rows A01C7/08] ; ploughs for making ridges A01B13/02 ; [N: lifting devices for agricultural machines A01B63/00])

Informative references

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

Seeders depositing seeds in rows	A01C 7/08
Ploughs for making ridges	A01B 13/02
Lifting devices for agricultural machines	A01B 63/00

Special rules of classification within this group

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

[N: Furrow packing devices, e.g. press wheels]

Informative references

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

Depth regulating wheels	A01C 7/203
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A01C 7/00

**Sowing ([N: with centrifugal wheels A01C17/00];
arrangements for driving working parts A01C19/00)**

References relevant to classification in this group

This subclass/group does not cover:

Sowing with centrifugal wheels	A01C 17/00
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Informative references

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

Arrangement for driving working parts of seeders	A01C 19/00
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A01C 7/006

[N: Minimum till seeding]

Definition statement

This subclass/group covers:

Tool or combinations of tools minimum till sowing techniques.

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
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Special rules of classification within this group

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 [N: (fertiliser distributors for hand use A01C15/02; tools for cultivation A01G1/12)]

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 1/12

A01C 7/04

Single-grain seeders with or without suction devices [N: (regulation A01C7/10; for quantities of seed A01C7/18)]

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

[N: using pneumatic means]

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
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A01C 7/06

Seeders combined with fertilising apparatus ([N: conducting

and depositing seed A01C7/20 ; apparatus for two kinds of fertiliser A01C15/00] ; combinations with soil working tools A01B49/04)

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 within this group

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

[N: Seeders depositing seeds in rows using pneumatic means]

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

[N: Ducts, distribution pipes or details thereof for pneumatic seeders (non-pneumatic seed pipes A01C7/206)]

Informative references

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

Non-pneumatic seed pipes	A01C 7/206
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Special rules of classification within this group

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

A01C 7/105

[N: Seed sensors]

Definition statement

This subclass/group covers:

Sensors for counting or detecting the passage of seeds.

A01C 7/16

Seeders with other distributing devices, e.g. brushes, discs, screws, slides ([N: with distributing slots A01C15/06; with slides A01C15/124]; with chains A01C15/18)

References relevant to classification in this group

This subclass/group does not cover:

this group 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

[N: Centrifugal distributors (pneumatic distributors A01C15/04)]

Informative references

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

Pneumatic distributors	A01C 15/04
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A01C 7/18

Machines for depositing quantities of seed at intervals [N: (dibble seeders A01C7/002; single-grain seeders A01C7/04; regulation A01C7/102; ridge marking A01B69/02)]

Informative references

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

Dibble seeders	A01C 7/002
Single-grain seeders	A01C 7/04
Regulation	A01C 7/102
Ridge marking	A01B 69/02

A01C 7/20

Parts of seeders for conducting and depositing seed [N: (combined with fertilising apparatus A01C7/06)]

Informative references

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

Parts combined with fertilising apparatus	A01C 7/06
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A01C 7/205

[N: comprising pressure regulation means]

Definition statement

This subclass/group covers:

Means for adjusting or maintaining a uniform pressure, even if they have an effect on the depth regulation.

Informative references

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

Press wheels	A01C 5/068
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A01C 7/208

[N: Chassis; Coupling means to a tractor or the like; Lifting means; Side markers (hoppers for seeders or spreaders A01C15/006)]

Informative references

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

Hoppers for seeders or spreaders	A01C 15/006
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A01C 9/00

Potato planters ([N: planting by hand A01C7/02] ; combinations with soil working tools A01B49/04)

Definition statement

This subclass/group covers:

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

Informative references

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

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

A01C 9/04

with bucket wheels [N: (with other distributing devices A01C9/08)]

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
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A01C 9/08

with other distributing devices e.g. flaps, screws, horizontal turning plates [N: (with bucket wheels A01C9/04)]

Informative references

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

Potato planters with bucket wheels	A01C 9/04
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A01C 11/00

Transplanting machines ([N: hand sowing A01C7/02] ; carriers for supporting persons A01B75/00 ; transplanting devices for trees A01G23/02)

References relevant to classification in this group

This subclass/group 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:

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

A01C 11/006

[N: Other parts or details or planting machines]

Special rules of classification within this group

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 13/00

Machines or apparatus for consolidating soil around plants

A01C 14/00

Methods or apparatus for planting not provided for in other groups of this subclass

A01C 15/00

Fertiliser distributors (A01C7/06 takes precedence; [N: combined with seeders A01C7/06] ; arrangements for driving working parts A01C19/00 ; [N: harrows with special additional arrangements A01B19/00] ; sand, gravel or salt spreaders for roads E01C19/20)

References relevant to classification in this group

This subclass/group does not cover:

Fertiliser distributors combined with seeders	A01C 7/06
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Informative references

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

Liquid fertilizers	A01C 23/00
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
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Special rules of classification within this group

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

[N: Hoppers]

Definition statement

This subclass/group covers:

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

A01C 15/02

for hand use [N: (hand sowing A01C7/02)]

Informative references

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

Hand sowing	A01C 7/02
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A01C 15/04

Using blowers

Definition statement

This subclass/group covers:

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

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
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A01C 15/10

with reciprocating pushers [N: or stirrers in front of the slots (with endless chains A01C15/18)]

Informative references

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

Distributors with endless chains	A01C 15/18
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A01C 15/122

[N: with moving floor parts (with endless chains A01C15/18)]

Informative references

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

Distributors with endless chains	A01C 15/18
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A01C 15/128

[N: with pushers or stirrers in front of the slits (with endless chains A01C15/18)]

Informative references

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

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

with means for lifting out the fertiliser [N: (feeding wheels, cell wheels, discs A01C7/12, bucket wheels A01C7/14)]

Informative references

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

Feeding wheels, cell wheels, discs	A01C 7/12
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Bucket wheels	A01C 7/14
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A01C 17/00

Fertilisers or seeders with centrifugal wheels ([N: hand-used implements A01C7/02, A01C15/02; fertilizer distributors A01C15/00] ; mechanical throwing machines for articles or solid bulk materials, in general B65G31/00 ; sand, gravel or salt spreaders for roads E01C19/20)

Informative references

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

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

A01C 17/006

[N: Regulating or dosing devices]

Definition statement

This subclass/group 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

[N: Devices controlling the quantity or the distribution pattern]

Definition statement

This subclass/group 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 fertilizers or seeders ([N: A01C17/005 takes preference])

References relevant to classification in this group

This subclass/group does not cover:

Driving mechanisms for centrifugal spreaders	A01C 17/005
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A01C 19/04

By a ground-engaging wheel

Special rules of classification within this group

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 fertilising (fertilisers C05 ; soil-conditioning or soil-stabilising materials C09K17/00) ; [N: Use of cartridges, e.g. also with explosives]

Definition statement

This subclass/group covers:

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

Informative references

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

Precision agriculture	A01B 79/005
Automatic guiding of agricultural machines	A01B 69/00
Fertilizers	C05

Soil-conditioning or soil-stabilising materials	C09K 17/00
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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 A01G25/00 ; spraying or applying liquids or other fluent materials in general B05)

Informative references

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

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

A01C 23/006

[N: Distribution of liquid fertilisers by gravity flow (distribution of liquid ammonia in or on the soil A01C23/024; under pressure A01C23/04)]

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

[N: Continuous injection tools (devices for making drill or furrows A01C5/066)]

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
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A01C 23/027

[N: Other methods for delivering fertiliser into the soil (sowing granular fertiliser A01C21/002; subirrigation A01G25/06)]

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

[N: Adding fertiliser to watering systems (adding insecticides or herbicides A01M7/00)]

Informative references

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

Adding insecticides or herbicides	A01M 7/00
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A01C 23/045

[N: Filling devices for liquid manure or slurry tanks (arrangements for connecting hoses of the quick-acting type F16L37/00)]

Informative references

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

Arrangements for connecting hoses of the quick-acting type	F16L 37/00
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A01C 23/047

[N: Spraying of liquid fertilisers (gravity flow A01C23/006; watering gardens, fields, sports grounds or the like A01G25/00)]

Informative references

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

Gravity flow	A01C 23/006
W watering gardens, fields, sports grounds or the like	A01G 25/00