



World Food  
Programme

## Technical Specifications for

### DATES - JORDAN

Version: 1

Replacing: n/a

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*Key update:*

*This specification represents the first version developed for international purchases and donations of Dates distributed in Jordan.*

#### 1. Introduction

Product name (hereafter called the product): **Dates**

Description: this specification applies to whole Dates (hereafter called the product) commercially prepared from sound fruits of the date tree (*Phoenix dactylifera L.*) in pitted or un-pitted styles ready for direct consumption and distributed by WFP in Jordan.

The following aspects are as per contract when required: varieties of dates (e.g., cane sugar varieties or invert sugar varieties), types (soft, semi-dry, dry), styles of dates (pitted or un-pitted), size/weight of dates and optional ingredients (e.g., glucose syrup, sugars, flour and vegetable oils).

Definition of parameters:

- **Blemishes:** scars, discoloration, sunburn, dark spots, blacknose or similar abnormalities in surface appearance affecting an aggregate area greater than that of a circle 7 mm in diameter.
- **Damaged dates:** dates affected by mashing and/or tearing of the flesh exposing the pit or to such an extent that it significantly detracts from the visual appearance of the date.
- **Unripe dates:** dates which may be light in weight, light in colour, have shrivelled or little flesh or a decidedly rubbery texture.
- **Unpollinated dates:** dates not pollinated as evidenced by thin flesh, immature characteristics and no pit in unpitted dates.
- **Dirt dates:** dates having embedded organic or inorganic material similar to dirt or sand in character and affecting an aggregate area greater than that of a circle 3 mm in diameter.
- **Insects and mites:** dates damaged by insects or mites or contaminated by the presence of mites, fragments of insects or mites or their excreta.
- **Scouring:** breakdown of the sugars into alcohol and acetic acid by yeasts and bacteria.
- **Decayed dates:** dates that are in a state of decomposition and very objectionable in appearance.

#### 2. Standards

Except when specified otherwise in the contract, the manufacture, testing, packaging and labelling, of the product shall be in strict compliance with the specifications set forth herein, and with the latest edition of the following standards/guidelines (whichever is stricter). Suppliers shall not deviate in any way from the specifications without WFP's prior written consent.

Codex Texts can be found in the following webpages:

- Standards: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/list-standards/tr/>;
  - Codes of practice: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/codes-of-practice/en/>;
  - Guidelines: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/guidelines/tr/>;
  - Guidelines of International Commission on Microbiological Specifications for Foods: <https://www.icmsf.org/publications/books/>
  - Maximum Residue Limits of pesticide and veterinary drug: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/maximum-residue-limits/tr/>;
- CODEX GENERAL PRINCIPLES OF FOOD HYGIENE (CXC 1-1969)
  - CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED (CXS 193- 1995)
  - RECOMMENDED METHODS OF SAMPLING FOR THE DETERMINATION OF PESTICIDE RESIDUES FOR COMPLIANCE WITH MRLS (CXG 33-1999)
  - CODEX STANDARD FOR DATES (CXS 143-1985)
  - CODEX GENERAL STANDARD FOR THE LABELLING OF PREPACKED FOODS (CXS 1-1985)
  - JORDAN JS 549:2021 REGULATION FOR VEGETABLES, FRUITS AND THEIR DERIVED PRODUCTS – DATES (Grade C dates to be considered)

Additives, such as sulphite dioxide, shall be applied in accordance with the latest version of GENERAL STANDARD FOR FOOD ADDITIVES (CXS 192-1995), and be labelled as per CXS 1-1985.

### 3. Processing

#### Food safety and quality management at manufacturing premises

The manufacturer shall be able to demonstrate by principle and practice the adoption, implementation and recording of:

- Good Manufacturing Practices (GMPs)
- Good Hygiene Practices (GHPs)
- Hazard Analysis Critical Control Point program (HACCP)
- Global Food Safety Initiative (GFSI) scheme principles

In this context an appointed WFP staff/Quantity & Quality Inspector/Surveyor/Auditor is entitled to visit the factory without prior notice during any period when WFP product is being manufactured to check that production is done as per WFP contract specifications.

The WFP staff/Inspector/Surveyor/Auditors may examine any aspect of Supplier's manufacturing premises and its documentation relating to any products or services provided to WFP, including but not limited to production facilities, procedures, records, certifications, or practices.

Food suppliers shall notify WFP immediately of lots (pre-delivery and post-delivery) that fail to meet contract requirements. Any testing on food safety parameters for foods (and/or the associated raw materials) delivered to WFP shall be pre-agreed with WFP.

### 4. Product Specifications

#### General requirements

- The product's organoleptic characteristics shall be characteristics of the designated product.
- The product shall meet the testing requirements stated in this document.

#### Product Safety

- The product shall not contain any harmful substances including, but not limited to, micro-organisms, heavy metals, pesticides, mycotoxin, foreign matter or anti-nutritional factors, in amounts that may represent a hazard to health. Where Codex standard is absent, JECFA and EFSA evaluations shall be considered for guidance limits.
- Fit for human consumption guarantee: Suppliers shall manage the quality of their product and guarantee that the product is 'fit for human consumption' and in line with TIC Council/IFIA Guidelines\*.
- The product shall comply strictly with Codex General Standard for Contaminants and Toxins in Food and Feed (CXS 193-1995) and Codex Maximum Residue Limits for Pesticide Residues.

Link of references mentioned above:

\*[http://www.ifia-federation.org/content/wp-content/uploads/Fit\\_for\\_Human\\_Consumption\\_Bulletin\\_Rev\\_4.pdf](http://www.ifia-federation.org/content/wp-content/uploads/Fit_for_Human_Consumption_Bulletin_Rev_4.pdf)

### **Shelf life**

The shelf life shall be as per contract. When shelf life is requested in the contract, products shall have a minimum of 80% of shelf-life remaining when presented to WFP for inspection, unless otherwise authorized by WFP.

### **5. Packaging**

The product covered by the provision of this specification shall be packed in appropriate packaging which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product. The packaging shall be made of substances which are safe and suitable for their intended use.

#### **Primary packaging**

Primary packaging must be food grade material (as per local regulation if existing or EU or FDA) and comply with general requirements stated in the contract.

The primary packaging must protect and preserve the food product for its entire shelf life.

Unless otherwise stated in the contract, the package is 2 units of 900g.

Weight and quantity tolerance must meet The International Organization of Legal Metrology International Recommendation OIML R 87<sup>1</sup>.

#### **Secondary packaging**

Unless otherwise stated in the contract, the following applies:

The product shall be packed in cartons suitable for the humanitarian supply chain. It is under supplier responsibility to select a packaging material that will resist to multiple handling and up to 2 meters stacking.

Cartons shall be:

- New, manufactured from well-constructed double walled corrugated board
- With an edge crush resistance of 45ECT = 45 lbs/in eq 7.5 kN/m (ISO 3037) and a specific weight of 700 to 1000 grams per square meter
- fully filled for maximum strength and dimensions adjusted to the load
- The fluting shall be vertical, supporting the load
- The carton should be plain brown
- No stapling will be accepted
- firmly closed (top and bottom)

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<sup>1</sup> OIML R 87 Quantity of commodity in prepackages [www.oiml.org/en/files/pdf\\_r/r087-e16.pdf](http://www.oiml.org/en/files/pdf_r/r087-e16.pdf), latest edition to be followed.

Two percent of spare printed carton as per marking requirements must be shipped along with the cargo and included in the price or as per contract.

## 6. Marking

The marking printed on packaging must be approved by WFP.

### Primary packaging (or as per contract)

- Name of the food including type
- "pitted dates" or "unpitted dates"
- Grade of the dates (A, B or C) – grade C dates to be considered
- List of ingredients
- Nutrient table
- Net quantity of the food
- Name and address of manufacturer and/or packing facility
- Name of supplier (name and address)
- Country of origin
- Production date (mm/yyyy) or (dd/mm/yyyy)
- Best Before End (mm/yyyy)
- Ingredient list with additives – if applicable
- Batch/Lot number
- Store under dry and hygienic conditions and away from direct sunlight
- Preparation method (pressed, unpressed etc.)
- Classification according to moisture content (soft: 23-30%, semi-soft: 18-22%, dry: less than 18%)
- Classification according to size of fruit for unpitted dates (small: more than 100 fruits/500g, medium: from 80 to 100 fruits/500g, large: less than 80 fruits/500g).
- Classification according to varietal types – cane sugar varieties or invert sugar varieties
- "Preserved by irradiation" in the case of irradiation and if irradiation logo is used

### Secondary packaging (or as per contract)

- Name of the food
- Net quantity of the food
- Name of supplier (Name and address)
- Supplied by (name and address) – if required
- Country of origin
- Production date (mm/yyyy) or (dd/mm/yyyy)
- Best Before End (mm/yyyy) – if required
- Batch/Lot number
- Store under dry and hygienic conditions and away from direct sunlight

The labelling of the product shall comply with Codex General Standard For The Labelling Of Prepackaged Foods (CXS 1-1985).

## 7. Stuffing of Containers and other transport vehicles<sup>2</sup>

If pallets<sup>3</sup> are used for transportation : it is highly recommended to have 3 first bottom layers placed as column stacking, the rest can be interlocked (cross-stacking) for load stability. Pallet shall be wrapped in a suitable manner (locked to the pallet, enough containment force) and the cartons should be banded when

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<sup>2</sup> For more details, please refer to container loading procedure: [https://documents.wfp.org/stellent/groups/public/documents/manual\\_guide\\_proced/wfp254688.pdf](https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp254688.pdf)

<sup>3</sup> Slip sheet can be used instead of pallets upon agreement with WFP.

necessary. The cartons shall be secured to pallets in order to prevent any damage to the contents or packaging during transport. Pallet used should be strong enough to support the charge during transportation. Pallets shall be stackable (minimum double stock) without damage to the cartons during shipment. The pallets are recommended to be heat treated as per ISPM 15 standards (methyl bromide fumigation is not allowed).

If no pallets are used for transportation: dunnage (of strong sheets such as carton, plywood...) should be placed inside each container/vehicle at every three layers of cartons to provide the required stacking strength. In addition, protecting material like air bag, carton, polystyrene, can be used. Also, kraft paper shall be adhered to all internal sides, door, and floor of container. Kraft paper also need to be placed on the top of packaging.

For transportation, unless fully shrink-wrapped pallets are used, and unless otherwise specified in the contract, it is highly recommended to place desiccant at appropriate location in order to absorb moisture.

WFP strongly recommend the use of high quality desiccant and calculate the quantity of desiccant based on:

- Efficiency of desiccant
- Length of time in transit in container
- Container capacity

Supplier needs to provide in the offer the type of desiccant and quantity to be used for the consignment.

The following table provides a guideline on the quantity to be used:

*Table 3: Guideline on the quantity to be used for calcium chloride-based desiccants:*

<b>Estimated days in container</b>	<b>20 ft container</b>	<b>40 ft container</b>
15-59 days	9.00 kg	17.50 kg
60-89 days	11.25 kg	22.50 kg
90-120 days	13.50 kg	25.00 kg

Better alternative material can be used upon agreement with WFP.

Empty containers/vehicles shall be clean, pest free and free of damage, odours and previous cargo remains. Ventilation holes shall remain clear and unsealed.

## **8. Additional technical document requirements**

When required, suppliers shall submit a Certificate of Analysis of the final product to WFP, along with other documents for payment. Additionally, suppliers shall provide other technical documents upon request from WFP.

## **9. Analytical requirements**

Suppliers shall follow their own food safety and quality management plan. WFP can conduct tests on products as per the Table below. Additionally, WFP reserves the rights to change this testing plan at any time.

Any products taken for the purpose of weight check and lab testing (including retention samples) shall be replenished by the suppliers. The shipment quantity shall not be less than the purchased quantity. Where non-destructive inspection is done, suppliers shall close the package or replace it.

In addition to the pre-delivery Q&Q inspection, WFP can also perform prior-assessment (e.g., documentation check, production monitoring, audits, assessment of raw materials, etc.).

Suppliers acknowledge that any prior-assessment by WFP or its designated inspection agents does not constitute a determination whether the specifications for the foods set out in this document or any purchase order (including mandatory technical requirements) have been met. Suppliers will be required to comply with their warranty and other contractual obligations whether or not WFP carries out such prior assessment.

The prior-assessment undertaken by WFP or its designated inspection agents will not substitute for the pre-delivery Q&Q inspection and testing of the goods upon delivery to WFP.

Table: Analytical Requirements and testing methods

▪ Quantitative tests:

No	Tests**	Unit	Minimum	Maximum	Reference methods (latest versions) or equivalent validated methods*
1	Weight of dates (for unpitted dates)	g	4.75	n/a	
2	Weight of dates (for pitted dates)	g	4.0	n/a	
3	Pits (for pitted dates)	count/100 dates	n/a	2	Visual examination
4	Fragments of pits (for pitted dates)	count/100 dates	n/a	4	Visual examination
5	Foreign matter	% m/m	n/a	0	Visual examination
6	Mineral impurities	g/kg	n/a	1	ISO 762
7	Blemishes	% by count	n/a	7	Visual examination
8	Damaged, unripe and unpollinated dates	% by count	n/a	4	Visual examination
9	Dirt dates, dates damaged by insects and mites	% by count	n/a	10	Visual examination
10	Scouring and decayed dates	% by count	n/a	1	Visual examination
11	Dead and live insects in any stage of growth	count	n/a	0	Visual examination
12	Hyphae of moulds	count	n/a	0	Visual examination

\*Meets the requirements of EN ISO 16140-2

\*\* The definition of parameters are as per 1.Introduction section of this specification.

▪ Qualitative tests:

No	Tests	Requirements	Reference methods (latest versions) or equivalent validated methods*
1	Moisture	23-30% for soft dates	AOAC 934.06

		18-22% for semi-dry dates Maximum 18% for dry dates	
2	Organoleptic characteristics (texture, color, smell, taste)	Characteristic colour, flavour and appearance for the variety. Free from abnormal odour and taste.	Organoleptic evaluation
3	Escherichia coli	n=5, c=2, m=0, M=10 cfu/g	ISO 7251
4	Salmonella	n=5, c=0, m=absent in 25g	ISO 6579
5	Pesticide residues	Maximum 0.01 mg/kg for each pesticide set out in Annex I	

\*Meets the requirements of EN ISO 16140-2

## Annex I

### Pesticide residues limits as per Jordan requirements

(E)-Fenpyroximate	Bensulfuron-methyl	Carboxin
(Z)-Ferlmzone	Bensulfide	Carfentrazone-ethyl
01-allate	Bentazone	Carpropamid
1-Naphthaleneacetamide	Benthiavalicarb-isopropyl	Chlorantraniliprole
2,6-Dichlorobenzamide	Benthiazole	Chlorbromuron
Acephate	Benzanilide	Chlorfenvinphos (E, Z)
Acetamiprid	Benzoximate	Chloridazon
Acibenzolar-s-methyl	Benzoylprop-ethyl	Chloriluazuron
Acrinathrin	Bifenazate	Chlorimuron-ethyl
Alachlor	Bifenthrin	Chlorotoluron
Aldicarb	Bitertanol (diastereo isomers)	Chloroxuron
Aldicarb-sulfone (Aldoxycarb)	Bixafen	Chlorpyrifos
Aldicarb-sulfoxide	Boscalid	Chlorpyrifos-methyl
Allethrin	Bromacil	Chlorpyrifos-oxon
Allidochlor	Bromadiolone	Chlorsulfuron
Alraton	Bromfenvinfos	Chromafenozlde
Ametoctradin	Bromophos methyl	Cinidon-ethyl
Ametryn	Bromuconazole	Clethodim (isomer)
Amidosulfuron	Bupirimate	Climbazole
Aminocarb	Buprofezin	Clnosulfuron
Ancymidol	Butachlor	Clodinafop-propargyl
Anilazine	Butafenacil	Clofentezine
Anilofos	Butamifos	Clomazone
Aramite	Butocarboxim-sulfone	Clomeprop
Atrazline	Butralin	Cloquintocet-mexyl
Azaconazole	Buturon	Cloransulam-methyl
Azamethiphos	Butylate	Clothianidin
Azimsulfuron	Cadusafos	Coumachlor
Azinphos-ethyl	Cafenstrole	Coumaphos
Aziprotryne	Captafol	Crotoxyphos
Azoxystrobin	Carbaryl (NAC)	Crufomate
Beflubutamid	Carbendazim	Cyanazine
Benalaxyl	Carbetamide	Cyazofamid
Benazolin-ethyl	Carbofuran	Cycloate
Benodanil	Carbofuran-3-keto	Cycloheximide



Cyclosulfamuron	Dimethomorph (E, Z)	Fenarimol
Cycloxydim	Dimetifan	Fenazaquin
Cycluron	Dimoxystrobin	Fenbuconazole
Cyflufenamid	Diniconazole	Fenchlorazol-ethyl
Cyflumetofen	Dinotefuran	Fenhexamid
Cymiazole	Dioxacarb	Fenobucarb
Cyproconazole	Diphenamid	Fenothlocarb
Deel	Dipropetryn	Fenoxanil
Demeton s methyl	Disulfoton-sulfone	Fenoxaprop-ethyl
Demeton-O	Disulfoton-sulfoxide	Fenoxaprop-P-ethyl
Demeton-S	Dithiopyr	Fenoxycarb
Demeton-S-methyl-sulfone	DNOC	Fenpropathrin
Desmedipham	Dodemorph	Fenpropidin
Desmetryn	Edifenphos	Fenpropimorph
Dialifos	Emamectin 81a	Fensulfothion-oxon
Diazinon	Emamectin B1b	Fensulfothlon
Dichlofenthlon	Epoxiconazole	Fensulfothlon-sulfone
Dichlormid	EPTC	Fenthlcin-sulfoxide
Dichlorvos	Esprocarb	Fenthlon-oxon
Diclobutrazol	Etaconazole	Fenthlon-oxon-sulfone
Dicrotophos	Ethametsulfuron-methyl	Fenthlon-oxon-sulfoxide
Didecyldimethylammonium chloride	Ethidimuron	Fenuron
Diethofencarb	Ethion	Fipronil
Difenacoum	Ethiprole	Fipronil-sulfide
Difenoconazole	Ethofumesate	Flamprop-isopropyl
Difenoxyuron	Ethoxysulfuron	Flamprop-methyl
Difenzoquat (Difenzoquat-methyl-sulfate)	Etofenprox	Flamprop-M-isopropyl
Diflubenzuron	Etoxazole	Flazasulfuron
Diflufenican Dimethachlor	Etrimfos	Flocoumafen
Dimefuron	Famoxadone	Flonlcamid
Dimepiperate	Famphur	Florasulam
Dimethametryn	Fenamidone	Fluacrypyrim
Dimethenamid	Fenamiphos	Fluazifop-butyl
Dimethirimol	Fenamiphos-sulfone	Fluazifop-P-butyl
Dimethoate	Fenamiphos-sulfoxide	Fluazinam

Fludioxonil	Lactofen	Mephosfolan
Flufenacet	Lenacil	Mepronil
Flufenoxuron	Linuron	Mesosulfuron-methyl
Fluometuron	Imazalil	Metaflumizone
Fluopicolide	Imazamethabenz-methyl (isomer)	Metalaxyl
Fluopyram	Imazosulfuron	Metalaxyl-M
Flupyr-sulfuron-methyl	Imibenconazole	Metamitron
Fluquinconazole	Imidacloprid	Metazachlor
Fluridone	Iodosulfuron-methyl	Metconazole
Flurochloridone	loxynil	Methabenzthiazuron
Fluroxypyr-1-methylheptylester	Ipconazole	Methacrifos
Flurtamone	lprobenfos	Methfuroxam
Flusilazole	lprovalicarb	Methidathion
Fluthiacet-methyl	Irgarol 1051	Methiocarb-sulfoxide
Flutolanil	Isazofos	Methlocarb
Flutriafol	Isocarbamid	Methlocarb-sulfone
Fluvalinate	Isofenphos	Methomyl
Fluxapyroxad	Isofenphos-methyl	Methoprotryne
Fonofos	Isofenphos-oxon	Methoxyfenozide
Fosthiazate (isomer)	IsomethlozIn	Metobromuron
Furalaxyl	Isonoruron	Metolachlor
Furametpyr	Isoprocab	Metolcarb
Furathiocarb	Isoproturon	Metominostrobin (E, Z)
Furmecyclox	Isoxaben	Metosulam
Halosulfuron-methyl	Isoxadifen-ethyl	Metoxuron
Haloxypop-2-ethoxyethyl	Isoxathion	Metrafenone
Haloxypop-methyl	Lufenuron	Metribuzin
Haloxypop-P-methyl	Ivermectine	Metsulfuron-methyl
Heptenophos	Malaoxon	Mevinphos
Hexaconazole	Malathion	Mexacarbate
Hexaflumuron	Mandipropamid	Molinate
Hexazinone	Mecarbam	Monalide
Hexythiazox	Mefenacet	Monocrotophos
Karbutilate	Mefenpyr-diethyl	Monolinuron
Kresoxim-methyl	Mefluidide	Monuron

Myclobutanil	Phosfolan	Pyracarbolid
Naled (Dibrom)	Phosmet	Pyraclifos
Napropamide	Phosphamidon	Pyraclostrobin
Neburon	Phoxim	Pyraflufen-ethyl
Nitenpyram	Picolinafen	Pyrazophos
Nitralin	Pinoxaden	Pyrazosulfuron-ethyl
Nitrothal-isopropyl	Piperophos	Pyrazoxyfen
Norflurazon	Pirimicarb	Pyributicarb
Novaluron	Pirimiphos-methyl	Pyridaben
Nuarlmol	Plcoxystrobin	Pyridaphenthion
Ofurace	Plrimicarb-desmethyl	Pyridate
Omethoate	Plrimiphos ethyl	PyrifenoX (E, Z)
Orbencarb	Pretilachlor	Pyrimethanil
Oxadiazon	Primisulfuron-methyl	Pyriminobac-methyl (E)
Oxadlxyl	Probenazole	Pyriproxyfen
Oxamyl	Prochloraz	Pyroquilon
Oxasulfuron	Profenofos	Pyroxulam
Oxycarboxin	Promecarb	Quizalofop-ethyl
Oxydemeton-methyl	Prometon	Quizalofop-P-ethyl
Paclobutrazol	Prometryn	Qulnalphos
Paraoxon-ethyl	Propachlor	Qulzalofop-methyl
Pebulate	Propamocarb	Rabenzazole
Penconazole	Propanil	Resmethrin
Pencycuron	Propaphos	Rimsulfuron
Pendimethalin	Propaquizafop	Rotenone
Penoxsulam	Propargite	Secbumeton
Permethrin	Propazine	Sethoxydim (isomer)
Pethoxamid	propetamphos	Siduron
Phenmedipham	Propiconazole (stereo isomer)	Silthlofam
Phenothrin	Propoxur	Simetryn
Phenthoate	Propoxycarbazone-sodium	Spinetoram J
Phorate	Propyzamide	Spinetoram L
Phorate-sulfone	Prosulfocarb	Spirodiclofen
Phorate-sulfoxide	Prosulfuron	Spiromesifen
Phosalone	Prothioconazole-desthio	Spirotetramat

Spiroxamine Isomer	Thiophanate-methyl
Sulfaquinoxaline	Thlodicarb
Sulfosulfuron	Tolclofos methyl
Sulfotep	Tolyffuanid
Tebuconazole	Tralkoxydim
Tebufenozide	Triadimefon
Tebufenpyrad	Triadimenol
Tebupirimfos	Tri-allate
Tebutam	Triapenthenol
Tebuthiuron	Triasulfuron
Temephos	Triazamate
Tepaloxymid (isomer)	Triazophos
Terbacil	Tricyclazole
Terbucarb	Trietazine
Terbufos-sulfone	Trifloxysulfuron
Terbufos-sulfoxide	Trifloxystrobin
Terbumeton	Triflumizole
Terbumeton-desethyl	Triflumurcin
Terbuthylazine	Triflusulfuron-methyl
Terbutryn	Triforine (isomer)
Tetraconazole	Trimethacarb-3,4,5
Tetraethylpyrophosphate	Triticonazole
Tetramethrin	Tritosulfuron
Thenylchlor	Valifenalate
Thiaclopid	Vamidotion
Thiamethoxam	Vemolate
Thiazaffuron	Warfarin
Thiazopyr	Zoxamide
Thifensulfuron-methyl	
Thiffuzamide	
Thiobencarb	
Thiofanox	
Thiofanox-sulfone	
Thiofanox-sulfoxide	
Thionazin	