BASF
We create chemistry

Pyroxasulfone	Group	15	Herbicide
Imazethapyr	Group	2	Herbicide

SPECIMEN

Zidua® PLUS

Herbicide

A PRE and POST selective residual herbicide for use in soybean and peanut

Active Ingredients:

pyroxasulfone: 3-[[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1*H*-pyrazol-4-yl]methyl]sulfonyl]-4,5-dihydro-5,5-dimethylisoxazole 23.58%

potassium salt of imazethapyr: 3-Pyridinecarboxylic acid, 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-ethyl-, potassium salt (1:1)* 15.56%

Other Ingredients: 60.86%

Total: 100.00%

* Equivalent to 13.75% (±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic acid

Contains 2.28 lbs of pyroxasulfone and 1.33 lbs imazethaypr per gallon formulated as a water-based suspension concentrate.

EPA Reg. No. 7969-509 **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See full label for complete **First Aid**, **Precautionary Statements**, **Directions For Use**, **Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Agricultural Solutions US LLC
2 TW Alexander Drive
Research Triangle Park, NC 27713

FIRST AID	
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • **DO NOT** induce vomiting unless told to do so by the poison control center or doctor. • **DO NOT** give anything by mouth to an unconscious person.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Agricultural Solutions US LLC (hereafter "BASF") for emergency medical treatment information at 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material for example barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride ≥ 14 mils, or viton ≥ 14 mils
- Shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

Engineering Controls

When handlers use closed systems or enclosed cabs that meet the requirements listed in the Worker Protection Standards (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

DO NOT apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Non-target Organism Advisory Statement

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Groundwater Advisory

This product has properties and characteristics associated with chemicals detected in groundwater. This product may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow groundwater. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce potential loading of pyroxasulfone and imazethapyr from runoff water and sediment. Runoff of this product will be reduced by avoiding application when rainfall is forecast to occur within 48 hours.

Point-source Contamination. To prevent point-source contamination, **DO NOT** mix or load this or any other pesticide within 50 feet of wells (including abandoned wells and drainage wells, sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs). This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or dike mixing/loading areas as described below. Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% of that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixes, or rinsates. Check valves or anti-siphoning devices must be used on all mixing equipment.

Endangered Species Protection Requirements

This product may have effects on federally listed threatened or endangered plant species or their critical habitat. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain that Bulletin, consult http://www.epa.gov/espp/, or call 1-844-447-3813 no more than 6 months before using this product. Applicators must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will be available from the above sources 6 months before their effective dates.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at the time of pesticide application.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Observe all cautions and limitations on this label and on the labels of products used in combination with **Zidua® PLUS herbicide**. **DO NOT** use **Zidua PLUS** other than in accordance with the instructions set forth on this label. The use of **Zidua PLUS** not consistent with this label may result in crop injury, poor weed control, and/or illegal residues. Keep containers closed to avoid spills and contamination.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material for example barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride ≥ 14 mils, or viton ≥ 14 mils
- Shoes plus socks

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

DO NOT use or store near heat or open flame. Store in original container only, in cool, dry, and well-ventilated area, separately from fertilizer, feed, or foodstuffs and away from other pesticides. **DO NOT** store this product under wet conditions. Avoid cross-contamination with other pesticides.

Pesticide Disposal

Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 pounds) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(continued)*

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage including cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF 1-800-832-HELP (4357)

Steps to take if material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

Zidua® PLUS herbicide is a selective preemergence and postemergence herbicide for controlling annual grass weeds, sedges, and annual broadleaf weeds (including biotypes resistant to ACCase inhibitors and glyphosate) in peanut and soybean listed in **Table 1**. Refer to **Crop-specific Information** section for use directions specific to each labeled crop.

Periods of dry weather following application of **Zidua PLUS** may reduce herbicidal effectiveness. **Zidua PLUS** must be activated by at least 1/2 inch of rainfall or irrigation before weed germination and emergence. When **Zidua PLUS** is not activated and weeds emerge, a labeled postemergence herbicide or shallow cultivation may be needed to control weed escapes. **Zidua PLUS** controls select non-ALS resistant emerged weeds (**Table 1**).

Herbicidal activity of **Zidua PLUS** may be reduced if trash on the soil surface from the previous crop covers more than 25% of the application area. Manage trash levels if needed with combine straw shredder/spreaders, earlier burndown of emerged weeds, or light tillage.

Table 1. Weeds controlled and suppressed by Zidua® PLUS herbicide

Common Name	Scientific Name	Level of control C = Control S = Suppression		Maximum Height or Diameter (inches)
		Residual Application	Post-emergence application	Post-emergence application
Annual Grass Weeds				
Barley, hare	*Hordeum murinum ssp. leporinum*	C		
Barnyardgrass	*Echinochloa crus-galli*	C	C	1 to 3
Bluegrass, annual	*Poa annua*	C		
Brome, downy[1]	*Bromus tectorum*	S		
Brome, Japanese[1] (Cheatgrass)	*Bromus japonicus*	S		
Canarygrass	*Phalaris canariensis*	C		
Cheat[1]	*Bromus secalinus*	S		
Crabgrass, large	*Digitaria sanguinalis*	C	C	1 to 3
Crabgrass, smooth	*Digitaria ischaemum*	C	C	1 to 3
Crowfootgrass	*Dactyloctenium aegyptium*	C		
Cupgrass, southwestern	*Eriochloa acuminata*	C		
Cupgrass, woolly[1]	*Eriochloa villosa*	S	C	1 to 3
Foxtail, giant	*Setaria faberi*	C	C	1 to 6
Foxtail, green	*Setaria viridis*	C	C	1 to 3
Foxtail, yellow	*Setaria pumila*	C	C	1 to 3
Goosegrass	*Eleusine indica*	C		
Johnsongrass, seedling	*Sorghum halepense*	C	C	1 to 8
Millet, Texas[1]	*Urochloa texana*	S		
Millet, wild-proso[1]	*Panicum miliaceum*	S	S	1 to 3
Oat, wild[1]	*Avena fatua*	S		
Panicum, fall	*Panicum dichotomiflorum*	C		
Red rice	*Oryza sativa*	C		
Ryegrass, Italian	*Lolium perenne ssp. multiflorum*	C		
Ryegrass, rigid	*Lolium rigidum*	C		
Sandbur, longspine[1]	*Cenchrus longispinus*	S		
Shattercane[1]	*Sorghum bicolor ssp. arundinaceum*	S	C	1 to 8
Signalgrass, broadleaf	*Urochloa platyphylla*	C	C	1 to 8
Sedge				
Nutsedge, yellow[1]	*Cyperus esculentus*	S		
Annual Broadleaf Weeds				
Alligatorweed	*Alternanthera philoxeroides*		C	1 to 3
Amaranth, Palmer	*Amaranthus palmeri*	C		
Amaranth, Powell	*Amaranthus powellii*	C		
Amaranth, spiny	*Amaranthus spinosus*	C	C	1 to 8
Anoda, spurred	*Anoda cristata*	C	C	1 to 2
Artichoke, Jerusalem	*Helianthus tuberosus*		C	6 to 10
Bristly, starbur	*Acanthospermum hispidum*		C	1 to 2
Buckwheat, wild[1]	*Fallopia convolvulus*	S		
Buffalobur[2]	*Solanum rostratum*	C	S	1 to 3

(continued)

Table 1. Weeds controlled and suppressed by Zidua® PLUS herbicide *(continued)*

Common Name	Scientific Name	Level of control C = Control S = Suppression		Maximum Height or Diameter (inches)
		Residual Application	Post-emergence application	Post-emergence application
Annual Broadleaf Weeds *(continued)*				
Carpetweed	*Mollugo verticillata*	C		
Chickweed, common[1]	*Stellaria media*	S		
Cocklebur, common[1]	*Xanthium strumarium*	S	C	1 to 8
Fleabane, hairy[1]	*Erigeron bonariensis*	S		
Galinsoga	*Galinsoga ciliata*	C		
Groundsel, common[1]	*Senecio vulgaris*	S		
Henbit[1]	*Lamium amplexicaule*	S	S	3
Horseweed (Marestail)[1]	*Conyza canadensis*	S		
Jimsonweed[1]	*Datura stramonium*	S	C	3
Kochia (non-ALS resistant)	*Bassia scoparia*	C	C	3
Ladysthumb	*Persicaria maculosa*	C	C	1 to 3
Lambsquarters, common[2]	*Chenopodium album*	C	S	1 to 2
Mallow, Venice[1]	*Hibiscus trionum*	S		
Marshelder	*Cyclachaena xanthiifolia*	C	C	1 to 3
Morningglory, ivyleaf[1]	*Ipomoea hederacea*	S	C	1 to 2
Morningglory, pitted[1]	*Ipomoea lacunosa*	S	C	1 to 2
Morningglory, smallflower	*Jacquemontia tamnifolia*	C	C	1 to 3
Morningglory, tall	*Ipomoea purpurea*	S	C	1 to 2
Nightshade, black	*Solanum nigrum*	C	C	1 to 3
Nightshade, Eastern black	*Solanum ptycanthum*	C	C	1 to 3
Nightshade, hairy	*Solanum physalifolium*	C	C	1 to 3
Pigweed	*Amaranthus* spp.	C		
Pigweed, redroot	*Amaranthus retroflexus*	C	C	1 to 8
Pigweed, smooth	*Amaranthus hybridus*	C	C	1 to 8
Pigweed, tumble	*Amaranthus albus*	C		
Poinsettia, wild	*Euphorbia heterophylla*	C		
Puncturevine	*Tribulus terrestris*	C		
Purslane, common	*Portulaca oleracea*	C		
Pusley, Florida	*Richardia scabra*	C		
Ragweed, common[1]	*Ambrosia artemisiifolia*	S	S	1 to 3
Ragweed, giant[1]	*Ambrosia trifida*	S	S	1 to 3
Shepherds purse[1]	*Capsella bursa-pastoris*	C		
Sida, prickly (Teaweed)	*Sida spinosa*	C		
Smartweed, Pennsylvania	*Persicaria pensylvanica*	C	C	1 to 3
Spurge, prostrate	*Euphorbia prostrata*	C	C	1 to 3
Spurge, spotted	*Euphorbia maculata*	C	C	1 to 3
Sunflower[2]	*Helianthus annuus*	C	C	1 to 3
Velvetleaf[2]	*Abutilon theophrasti*	C	C	1 to 3
Waterhemp	*Amaranthus tuberculatus*	C		

[1] Partial control or suppression only. **Zidua PLUS** may be used in tank mixes or sequential applications with other labeled herbicides that provide additional control of noted weeds.

[2] When **Zidua PLUS** is soil-applied, these weeds are more consistently controlled by preplant incorporated treatments.

Mode of Action

Zidua® PLUS herbicide contains two active ingredients, imazethapyr (**Group 2**) and pyroxasulfone (**Group 15**). Herbicides in mode of action **Group 2** inhibit acetolactate synthase (ALS), also called acetohydroxyacid synthase (AHAS), a key enzyme in the biosynthesis of isoleucine, leucine, and valine (branch-chained amino acids). Herbicides in mode of action **Group 15** act to inhibit very long-chain fatty acid synthesis resulting in root and shoot growth inhibition. This activity provides residual control of susceptible germinating seedlings before or soon after they emerge from the soil.

Herbicide Resistance Management

Any weed population may contain plants naturally tolerant to **Group 2** and **Group 15** herbicides. Weeds naturally tolerant or resistant to these two groups may be managed using effective herbicide(s) from a different mode of action and/or by using cultural or mechanical practices. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, optimum seeding rate/row spacing and timely tillage.

To aid in the prevention of developing weeds resistant to this product, follow these steps where practical:

- Start clean with tillage or an effective burndown herbicide program.
- **DO NOT** rely on a single herbicide site of action for weed control during the growing season.
- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Apply full labeled rates of **Zidua PLUS** for the most difficult-to-control weed in the field at the specified time (correct weed size) to minimize weed escapes.
- Use of preemergence herbicides that provide soil residual control of broadleaf and grass weeds is recommended to reduce early season weed competition and allow for more timely in-crop postemergence herbicide applications with an approved herbicide.
- Avoid application of herbicides with the same site of action more than twice in a season.
- Scout fields after application to detect weed escapes or shifts in weed species.
- Indicators of possible herbicide resistance include:
  1. failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  2. a spreading patch of non-controlled plants of a particular weed species;
  3. surviving plants mixed with controlled individuals of the same species.
- Report any incidence of non-performance of this product against a particular weed species to your BASF retailer or representative.
- If resistance is suspected, treat weed escapes with a herbicide having a different mode of action and/or use non-chemical methods to remove escapes, as is practical, with the goal of preventing further seed production.

Additionally, follow as many of these herbicide resistance management practices as is practical:

- Use a broad spectrum soil-applied herbicide with other modes of action as a foundation in a weed control program.
- Utilize sequential applications of effective herbicides with alternative modes of action.
- Rotate the use of this product with herbicides having a different mode of action than **Group 2** and **Group 15**.
- Avoid making more than two applications of **Group 2** or **Group 15** herbicides within a single growing season unless mixed with another site of action with an overlapping spectrum for the difficult-to-control weeds.
- Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Thoroughly clean plant residues from equipment before and after leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields during and after harvest to reduce weed seed production.
- Contact the local agricultural extension service, BASF representative, ag retailer or crop consultant for further guidance on weed control practices as needed.

Crop Response

Occasionally, internode shortening and/or temporary yellowing of crop plants may occur after **Zidua PLUS** application. These effects occur infrequently and are temporary. Normal growth and appearance should resume within 1 to 2 weeks. Application to crops under stress because of inadequate or excess of moisture for normal crop development, cool and hot temperatures, sodic soils, poorly drained soils, hail damage, flooding, pesticide injury, mechanical injury, or widely fluctuating temperatures may result in crop injury.

Application Instructions

Zidua PLUS may be used in conventional, minimum, and no-till conservation tillage systems. **Zidua PLUS** is applied as a preplant, preplant incorporated, preemergence or postemergence spray. When applied as a residual herbicide, rainfall and/or irrigation is necessary to activate **Zidua PLUS** for acceptable weed control. Lack of an activating rainfall or irrigation after a **Zidua PLUS** preemergence or postemergence application may reduce the residual performance. Weeds that germinate after application but before an activating rainfall or irrigation of at least 0.5 inches may not be controlled by **Zidua PLUS**. Irrigation or shallow incorporation may improve weed control if activation has not occurred within seven days after the **Zidua PLUS** application.

Zidua PLUS may be used on peat and muck soils, and mineral soils with 10% or more organic matter, but weed control may be inconsistent and/or reduced.

Make postemergence applications of **Zidua® PLUS herbicide** when weeds are small and actively growing. An adjuvant is recommended with **Zidua PLUS** for best postemergence activity; refer to **Tank Mixing Information** section and **Crop-specific Information** sections for details. Postemergence activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger weeds, use higher spray volumes.

Cultivation should be delayed until seven days after applying **Zidua PLUS** or a reduction in weed control may occur.

Use extreme care when applying **Zidua PLUS** to prevent injury to desirable plants. **Zidua PLUS** may cause injury to desirable sensitive plants when contacting their roots, stems or foliage.

Table 2. Use Rate Equivalency

Amount of Zidua PLUS (fl ozs/A)	**Amount of Pyroxasulfone** (lb ai/A)	**Amount of Imazethapyr** (lb ai/A)
4.5	0.080	0.047
6.0	0.107	0.062

Application Timing

Zidua PLUS may be applied preplant surface, preplant incorporated, preemergence, early postemergence, postemergence-directed (layby), or in the fall. Refer to the **Crop-specific Information** section for specific application instructions (timings, rates, restrictions, and precautions) by crop.

Preplant Surface Application. Apply **Zidua PLUS** alone or in tank mix within 45 days of planting. If weeds not controlled by **Zidua PLUS** are present at the time of application, use additional weed control methods such as a tank mix with an appropriate postemergence herbicide(s), to control emerged weeds.

Preplant Incorporated (PPI) Application. Incorporate **Zidua PLUS** into the upper (1 to 2 inches) soil surface within 14 days of planting. Deeper incorporation may increase the potential for crop injury and may result in reduced weed control. Use appropriate equipment for uniform shallow incorporation, including a field cultivator, harrow, rolling cultivator, or finishing disc.

Preemergence Surface Application. After planting and before crop emergence, apply a uniform broadcast treatment to the soil surface. Apply **Zidua PLUS** only to a uniform seedbed which is firm and free of clods, cracks, excess trash (previous crop residue), and weed growth. If weeds are present, apply **Zidua PLUS** in a tank mix with an appropriate postemergence herbicide to ensure a clean seedbed, for example a glyphosate-containing product.

Early Postemergence Application. To maximize residual control, **Zidua PLUS** must be applied and activated before weed seedling emergence or in a tank mixture that controls emerged weeds. **Zidua PLUS** will control or suppress certain weed species that are actively growing and have emerged. To maximize postemergence activity, tank mix with an appropriate postemergence herbicide and target weeds that are 3 inches or less.

Fall/Winter Application for controlling weeds germinating in the fall, or winter weeds. Zidua PLUS may be broadcast surface applied in the fall or winter after crop harvest. **DO NOT** apply to frozen or snow-covered soil.

Tillage operations may be conducted before or after applying **Zidua PLUS**. If tillage is used following an application, tillage must be shallow (no more than 2-inches deep) to uniformly incorporate the herbicide into the upper soil surface.

Application Methods and Equipment

Zidua PLUS may be applied by aerial or ground application. **DO NOT** apply through any type of irrigation.

Thorough spray coverage is required for optimum weed control and can be improved with proper nozzle and spray volume selection. Use and configure application equipment to provide an adequate spray volume, an accurate and uniform distribution of spray droplets over the treated area. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the use rates specified in this label.

Zidua PLUS MUST be applied using water as the spray carrier.

Spray Mix Preparation Advisory

Aerial Spray Carrier Volume. Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area.

Ground Spray Carrier Volume. Use 10 or more gallons of water per treated acre for weed control application.

Mandatory Spray Drift Management

Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium to ultra coarse spray droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.

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Mandatory Spray Drift Management

(continued)

- Nozzles must be oriented so the spray is directed towards the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Ground Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 ft above the ground or crop canopy.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium to ultra coarse spray droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Spray Drift Advisories

The applicator is responsible for avoiding off-site spray drift. Be aware of nearby non-target sites and environmental conditions.

Importance of Droplet Size

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size - Ground Boom

Volume. Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.

Pressure. Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.

Spray Nozzle. Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size - Aircraft

- **Adjust Nozzles.** Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

Boom Height - Ground Boom

- Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

Release Height - Aircraft

Higher release heights increase the potential for spray drift.

Shielded Sprayers

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

Temperature and Humidity

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

Temperature Inversion

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

Wind

Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.**

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions. Triple rinse the equipment before and after applying **Zidua® PLUS herbicide**.

Additives

Zidua PLUS is formulated to provide optimal residual preemergence weed control. However, several tank mixes with **Zidua PLUS** may require an adjuvant to improve burndown of emerged weeds. Therefore, an adjuvant may be used with **Zidua PLUS** tank mixes that are applied fall, preplant, preemergence, or early postemergence. Follow the adjuvant directions for the tank mix partner of **Zidua PLUS**.

Tank Mixing Information

It is the pesticide user's responsibility to ensure that all products in the mixtures are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in

tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Zidua® PLUS herbicide may be tank mixed or applied sequentially with other herbicide products registered for use in any labeled crop found in this label for a broader spectrum of residual weed control and/or control of emerged weeds. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for use on the labeled crop. Follow the adjuvant directions for the tank mix partner of **Zidua PLUS**. Read and follow tank mix product labels for application instructions, use restrictions and precautions, and rotational cropping guidance.

Physical incompatibility, reduced weed control, or crop injury may result from mixing **Zidua PLUS** with other pesticides, additives, or fertilizers.

Adjuvants

When an adjuvant or specific adjuvant product (such as a drift control agent) is used with this product, the use of a Council of Producers & Distributors of Agrotechnology (CPDA) certified adjuvant is advised.

Crop Oil Concentrate (COC). Petroleum-based or vegetable seed-based oil concentrate may be used. Methylated seed oil (MSO) is advised when weeds are under moisture or temperature stress. Use methylated seed oil at 1.0% volume/volume (v/v) (1 gallon per 100 gallons of spray solution), or use crop oil concentrate at 1.0% v/v (1 gallon per 100 gallons of spray solution).

OR

Surfactant. Use nonionic surfactant (NIS) containing at least 80% active ingredient. Apply surfactant at 0.25% v/v (1 quart per 100 gallons of spray solution). An organosilicone surfactant or dry surfactant may be used in place of NIS.

AND

Fertilizer Solution. Recommended nitrogen-based fertilizers including liquid fertilizers (such as 28% N, 32% N, or 10-34-0) may be applied at 1.25 to 2.5 gallons per 100 gallons of spray solution. Use the higher rate when weeds are under moisture or temperature stress. Instead of liquid fertilizer, spray grade ammonium sulfate (AMS) may be used at 12 to 15 lbs per 100 gallons of spray solution.

Compatibility Test for Tank Mix Products

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the mixing order using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre.
3. Always cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution must not have free oil on the surface, or fine particles that precipitate to the bottom, or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Shake Zidua PLUS container well before use.

Maintain agitation throughout mixing and application until spraying is completed.

1. **Water** - Fill tank 1/2 to 3/4 full with clean water and start agitation.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives** (dry and liquid fertilizers including ammonium sulfate or urea ammonium nitrate)
5. **Water-dispersible products** (including dry flowables, wettable powders, suspension concentrates, or suspoemulsions) - Add **Zidua PLUS** at this point in the mixing process.
6. **Water-soluble products**
7. **Emulsifiable concentrates** (including methylated seed oil adjuvants)
8. **Remaining quantity of water**

If the spray mixture is allowed to settle for any period, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

Use Restrictions

- **Maximum use rate** - Refer to **Crop-specific Information** section for maximum application use rates of **Zidua PLUS** in each crop and use pattern.
- Refer to **Crop-specific Information** for additional crop use restrictions.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **Irrigation** - **DO NOT** use flood irrigation to apply, activate, or incorporate **Zidua PLUS**.
- **Zidua PLUS is not for sale, distribution, or use in Nassau and Suffolk counties in New York State.**

- **Emergency replanting intervals** - If a labeled crop treated with **Zidua® PLUS herbicide** is lost to crop failure (because of environmental factors including drought, frost, hail, etc.), the crop may be replanted immediately. However, **DO NOT** repeat application of **Zidua PLUS** after crop failure.

Crop Rotation Restrictions

Use the following information to determine the required interval between **Zidua PLUS** application and rotational crop planting as well as replanting after crop failure because of environmental factors such as drought, frost, or hail. Determine the rotational crop interval for tank mix products and use the most restrictive interval of all products applied.

Table 3. Crop Rotation Restrictions When Using Zidua PLUS at 6 fl ozs/A

Crop	Rotational Crop Interval (months after application)
Alfalfa	10
Barley (except in ND)	11
Barley (in ND)	18
Birdsfoot trefoil	18
Canola (Rapeseed)	40
Corn	9
Corn (resistant/tolerant to Pursuit® herbicide)	0
Cotton	18
Edible peas, succulent edible beans, and other edible dry beans	11
Flax	26
Grain sorghum	18
Grasses grown for seed[1]	18
Lentil	1
Lettuce	18
Lima bean	18
Peanut	2
Peas, field (dry)	1
Popcorn	18
Potato	26
Rice	40
Safflower	18
Small grains (other than wheat)	18
Snap bean	18
Sorghum	18
Southern pea	18

(continued)

Table 3. Crop Rotation Restrictions When Using Zidua PLUS at 6 fl ozs/A *(continued)*

Crop	Rotational Crop Interval (months after application)
Soybean	0
Sugar beet[2]	40
Sunflower	18
Sweet corn	18
Sweet potato	40
Tobacco (grown in FL, GA, KY, NC, SC, TN, and VA)	9.5
Wheat	4
All crops not listed elsewhere in **Crop Rotation Restrictions**	40

[1] Includes oats, wheat and other grass crops.

[2] Forty months after a **Zidua PLUS** application and before planting any crop not listed elsewhere in **Crop Rotation Restrictions**, a successful field bioassay must be completed. The field bioassay consists of a test strip of the intended rotational crop planted across the previously treated field and grown to maturity. The test strip should include low areas and knolls and include variations in soil such as type and pH. If no crop injury is evident in the test strip, the intended rotational crop may be planted the following year. Sugar beet production can be reduced when grown in soil conditions with a pH less than 6.5. If the field is limed to adjust pH before planting rotational crops not listed in the **Crop Rotation Restrictions**, apply the lime at least 12 months before planting the rotational crop.

Full-rate application of products containing Chlorimuron ethyl (**Classic® herbicide**, etc.), cloransulam-methyl (**FirstRate® herbicide**), flumetsulam (**Hornet® herbicide**), imazaquin (**Scepter® herbicide**), or products containing imazethapyr the same year a **Zidua PLUS** may increase the risk of injury to sensitive rotational crops. Consult labels for recommended uses of these products in combinations.

State Specific Rotational Recommendations

Alabama, Delaware, Florida, Georgia, Indiana, Kentucky, Maryland, New Jersey, North Carolina, Pennsylvania, South Carolina, and Virginia ONLY. The following crops may be planted 18 months following the last application of **Zidua PLUS**: Bahiagrass, cabbage, cantaloupe, cucumber, Irish potato, onion, sweet pepper transplants, sweet potato transplants, tomato transplants, and watermelon.

North Carolina, South Carolina, and Virginia ONLY - Cotton may be planted nine and one-half months after an application of **Zidua PLUS** if ALL the following criteria are met:

- **Zidua PLUS** is applied to peanuts only
- Soil texture is sandy loam or loamy sand only.
- Greater than 16 inches of rainfall and/or irrigation is received following application of **Zidua PLUS** through October of the application year.

Crop-specific Information

Read product information, mixing, application, weeds controlled, and additive instructions in preceding sections of the label.

Peanut

Zidua® PLUS herbicide may be applied early postemergence to peanut for residual preemergence control of listed weeds (**Table 1**). Use **Zidua PLUS** as part of a weed control program in peanut either in combination or sequentially with other herbicides for a broader spectrum of weed control and/or control of emerged weeds. Before applying to peanut, verify with your local seed company (supplier) the selectivity of **Zidua PLUS** on your variety to avoid potential injury.

Application Timing

Zidua PLUS may be applied in a single application.

Early Postemergence Application

Apply **Zidua PLUS** at 4.5 to 6 fl ozs/A as a broadcast spray to peanut from "at-cracking" stage to first true leaf stage through beginning of pod development stage.

Zidua PLUS applications to emerged peanut may result in temporary leaf burn and stunting, but a reduction in peanut yield is unexpected. Tank mixes of **Zidua PLUS** with other crop protection products or adjuvants may significantly enhance this effect. Depending upon growing conditions, recovery from this injury begins immediately but may take several weeks for the injury to dissipate entirely.

Adjuvants may be applied with **Zidua PLUS** when making early postemergence applications.

Crop-specific Restrictions

- **DO NOT** apply more than 6 fl ozs/A of **Zidua PLUS** (0.107 lb ai/A of pyroxasulfone plus 0.062 lb ai/A of imazethapyr) in a single application.
- **DO NOT** make more than one application of **Zidua PLUS** per year in peanut.
- **DO NOT** graze or feed treated peanut forage, vines, hay, or straw to livestock.
- **DO NOT** harvest peanuts for at least 85 days after **Zidua PLUS** application.
- **Zidua PLUS** applied early postemergence (at-cracking through first leaf stage) may result in temporary growth suppression in peanut if extreme conditions of high rainfall and extended periods of water-saturated soil occur during peanut germination or early seedling development.
- **Zidua PLUS** may be used in conjunction (separate application) with **Zidua® SC herbicide** (pyroxasulfone). **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone from sequential applications in peanut per year.

Soybean

Apply **Zidua PLUS** at 4.5 to 6 fl ozs/A for all methods of application: early preplant, preplant incorporated, preemergence and postemergence to sixth-trifoliate soybean leaf stage for the control of listed weeds (**Table 1**). Application may be made up to 45 days before planting soybean. See additional state-specific soybean application instructions section for **North Dakota and Minnesota (north of Highway #210)**. Use **Zidua PLUS** as part of a weed control program in soybean either in combination or sequentially with other herbicides for a broader spectrum of weed control and/or control of emerged weeds. Before applying to soybean, verify with your local seed company (supplier) the selectivity of **Zidua PLUS** on your variety to avoid potential injury.

DO NOT tank mix **Zidua PLUS** with clomazone-containing herbicides. **Zidua PLUS** may be applied postemergence following a soil application of a clomazone-containing herbicide.

If soybeans are furrow irrigated, till the soil before planting winter wheat or barley. Break up beds and mix soil with tillage equipment set to cut 4- to 6-inches deep.

North Dakota and Minnesota (north of Highway #210)

Apply **Zidua PLUS** at 4.5 fl ozs/A (0.08 lb ai/A of pyroxasulfone plus 0.047 lb ai/A of imazethpyr) postemergence only to soybean in North Dakota and Minnesota (north of Highway #210).

Crop-specific Restrictions

- A maximum of 6 fl ozs/A of **Zidua PLUS** (0.107 lb ai/A of pyroxasulfone plus 0.062 lb ai/A of imazethapyr) may be applied per year to soybean.
- **DO NOT** make more than one application of **Zidua PLUS** per year in soybean.
- **DO NOT** graze or feed treated soybean forage, hay or straw to livestock.
- **DO NOT** harvest soybeans for at least 85 days after **Zidua PLUS** application.
- **Replanting** - In the event of a crop loss because of weather, soybean can be replanted. **DO NOT** work the soil deeper than 2 inches.
- **Not for use in California.**
- **Zidua PLUS** may be used in conjunction (separate application) with **Zidua SC**. Consult **Zidua SC** label to determine appropriate rate and maximum cumulative amount from sequential applications per year in soybean.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF Agricultural Solutions US LLC ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

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