

55467-8

1/16/2003

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
55467-8

Date of Issuance:
JAN 16 2003

NOTICE OF PESTICIDE:
 Registration
 Reregistration

Term of Issuance:
Conditional

Name of Pesticide Product:
Volley Tenkoz
Herbicide

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Tenkoz, Inc
100 North Point Center East, Suite 330
Alpharetta, GA 30022

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment.
 - a. Add the phrase "EPA Registration No. 55467-8."
 - b. At the beginning of the list of Personal Protective Equipment (PPE) within the Precautionary Statements, add the statements "Some of the materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for category A on the EPA chemical-resistance category selection chart." In addition, revise the requirement for "waterproof gloves" to a requirement for "chemical resistant gloves of any waterproof material such as polyethylene or polyvinyl chloride."
 - c. Within the list of PPE for early reentry in the Agricultural Use Requirement for "waterproof gloves" to a requirement for "chemical resistant gloves made of any waterproof material."
 - d. Revise your First Aid Statements as per PR Notice 2001-1.

Signature of Approving Official:

Date:

1-16-03

e. Under Storage and Disposal revise "Storge" to read "**Pesticide** Storage".

3. Submit three (3) copies of your final printed before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of labeling is enclosed for your records

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RESTRICTED USE PESTICIDE

Due to Oncogenicity

For retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

Volley Tenkoz Herbicide

For use only on field corn, production seed corn, silage corn, and popcorn

Active Ingredients:

acetochlor: 2-chloro-2'-methyl-6'-ethyl-N-ethoxymethylacetanilide.....	70.87%
Inert Ingredients:.....	29.13%
Total	100.00%

Contains 6.4 pounds active ingredient per gallon

EPA Reg. No. 55467-

Keep Out of Reach of Children

WARNING AVISO

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.)

ACCEPTED
with COMMENTS
In EPA Letter Dated:

JAN 16 2003

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.

55467-8

**Tenkoz Inc.
100 North Point Center East
Alpharetta, GA 30022**

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Precautionary Statements Hazards to Humans and Domestic Animals

WARNING

Causes Skin And Eye Irritation • Harmful If Swallowed, Inhaled, Or Absorbed Through Skin

Do not get on skin, in eyes, or on clothing. Avoid breathing spray mist.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (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:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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.

First Aid

Immediately start the procedures below. If further treatment is required, contact a Poison Control Center, a physician or the nearest hospital.

If on Skin: Wash immediately with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention if irritation occurs.

If in Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Have eyes examined by medical personnel.

If Swallowed: Immediately give several glasses of water but do not induce vomiting. If vomiting occurs, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

If Inhaled: Remove victim to fresh air. Get medical attention if respiratory irritation occurs or if breathing becomes difficult.

Environmental Hazards

This product is toxic to fish. Do not apply directly to water, or 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 washwaters.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the groundwater is shallow, may result in groundwater contamination.

Acetochlor has properties that may result in surface water contamination via dissolved runoff and runoff erosion. Practices should be followed to minimize the potential for dissolved runoff and/or runoff erosion.

Physical and Chemical Hazards

Do not use or store near heat or open flames.

Notice: Read the entire label. Use only according to label directions. Before using this product, read "Warranty Disclaimer" "Inherent Risks of Use" and "Limitation of Remedies" elsewhere on this label. If terms are not acceptable, return at once unopened.

In case of emergency endangering health or the environment involving this product, call 1-800-424-7300. If you wish to obtain additional product information, visit our web site at www.tenkox.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

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.

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, and 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. 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. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

Storage and Disposal

Prohibitions: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

Storage: Store in original container only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with vermiculite, earth, or synthetic absorbent.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Disposal: Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning.

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If burned, stay out of smoke.

For Bulk and Mini-Bulk Containers

Container Disposal: Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

Container Precautions: Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

For Mini-Bulk Containers: Refill Only With Volley herbicide.

The contents of this container cannot be completely removed by cleaning. Refilling with materials other than Volley will result in contamination and may weaken container.

- After filling and before transporting, check for leaks.
- Do not refill or transport damaged or leaking container.
- Circulation before dispensing is required.

CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!

General information

For use only on field corn, production seed corn, silage corn and popcorn. Corn in this label refers to all four types: field corn, production seed corn, silage corn, and popcorn.

Volley is a unique combination of the herbicide acetochlor and the antidote or safener dichlormid. While the acetochlor provides weed control, the dichlormid safens corn against herbicide injury. Volley may be applied to the surface or incorporated into the top 1-2 inch layer of soil. It is recommended for control alone, or in tank mix combinations as indicated, for the weeds listed in the "Target Weeds" section of these use directions. Volley controls weeds by interfering with normal germination and seedling development. Volley will not control established or germinated weeds present at application.

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Use Restrictions

- Do not apply to the following soils if groundwater depth is 30 feet or less: sand with less than 3% organic matter; loamy sand with less than 2% organic matter; or sandy loam with less than 1% organic matter.
- This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, 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 properly diked mixing/loading areas.
- Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.
- Do not apply this product through any type of irrigation system.
- Do not use flood irrigation to apply or incorporate this product.
- Product must be used in a manner that will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.
- Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas. To prevent off-site movement due to runoff or wind erosion:
 - Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface must first be settled by rainfall or irrigation.
 - Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered soils.
 - Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.
- Do not apply this product using aerial application equipment.
- Do not apply when wind conditions favor drift to non-target sites. To minimize spray drift to non-target areas:
 - Use low pressure application equipment capable of producing a large droplet spray.
 - Do not use nozzles that produce a fine droplet spray.
 - Minimize drift by using sufficient spray volume to ensure adequate coverage with large droplet size sprays.
 - Keep ground-driven spray boom as low as possible above the target surface.

- Make application when the wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid application when gusts approach 15 mph.
- Low humidity and high temperatures increase the likelihood of spray drift to sensitive areas. Avoid spraying during conditions of low humidity and/or high temperatures. Do not apply during inversion conditions.

General Use Precautions

Read all label directions before using.

- Do not use **Volley** on any crop other than field corn, production seed corn, silage corn, and popcorn.
- Do not allow **Volley** to contaminate feed or food.
- **Volley** should not be stored near seeds or fertilizers.
- All containers of **Volley** should be kept tightly closed when not in use.
- Do not overdose or use rates higher than specified on this label.
- **Rotational Crops:** (1) If crop treated with **Volley** is lost, field corn, production seed corn, silage corn, or popcorn may be replanted immediately. Do not make a second application of **Volley**. (2) Do not rotate to crops other than corn, soybeans, sorghum, wheat, or tobacco. Wheat may be planted 4 months after application. Corn, soybeans, sorghum, or tobacco may be planted the spring following application.
- Do not apply more than 3% pints of **Volley** per acre per season.

Application Directions - Corn

Carriers

Liquids: Either water or liquid fertilizers such as solutions, slurries, or suspensions may be used as liquid carriers. If fluid fertilizers are used, a physical compatibility with these must be done before combining in the spray tank. See Appendix I for details of the compatibility testing procedure. Even if **Volley** is physically compatible with a fluid fertilizer, constant agitation is necessary to maintain a uniform mixture during application.

Dry Bulk Fertilizer: **Volley** may be impregnated on dry bulk fertilizer and applied as the fertilizer is spread. See Appendix II for details including which fertilizers are compatible.

Adding to Spray Tank

The spray tank must be clean, thoroughly rinsed, and decontaminated before adding either **Volley** alone or in tank mix combinations. If water is used as the carrier, use clean water.

Used Alone: If **Volley** is used alone, add the recommended amount to the spray tank before the tank is half filled. The addition of the remaining water or fluid fertilizer carrier can aid in the thorough agitation and mixing of the spray solution.

Tank Mixed: If a tank mixture is used, it is recommended that a small-scale test of compatibility be done before actual tank mixing. See Appendix I for details on the procedure for such a test.

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Once compatibility is confirmed for the tank mix, fill the tank half full. Start and continue agitation throughout mixing. All return lines to the spray tank must discharge below the liquid level. Add the tank mix components in the following order:

- Mix and disperse wettable powders or dry flowables first. Premix wettable powders or dry flowables in a little water in a pail or bucket before adding to the spray tank to improve the compatibility of the final tank mix. Thoroughly disperse them in the tank before adding **Volley**.
- Add **Volley** to the tank last.
- Finish filling spray tank with liquid carrier, while at the same time, providing agitation.
- Tank mix combinations should not be left in the spray tank for prolonged periods as settling may occur. Batches should be mixed and applied the same day.

Volume

Liquid: Use a minimum of 10 gallons in broadcast boom equipment for ground applications.

Dry Bulk Fertilizer: Use at least 200 pounds of dry bulk fertilizer per acre. See Appendix II for more details.

Pressure

If liquid carriers are used, the pressure at the nozzle should be 15 to 40 psi to ensure good distribution of the spray pattern. Consult spray tip manufacturer's recommendation on appropriate pressure for the nozzles and screens you are using.

Application Timing and Methods

In reduced or no-till systems, a burndown herbicide such as Gramoxone Extra herbicide, Touchdown herbicide, or 2,4-D may be tank mixed with **Volley** if emerged weeds are present at the time of application.

Early Preplant: **Volley** and certain tank mixtures may be applied up to 30 days before planting.

Preplant Incorporation: **Volley** and certain tank mixes may be mechanically incorporated in the top 2 inches of the soil by mechanical means such as field cultivators, finishing discs, rotary hoes, spring tooth harrows, or power driven cultivation equipment. Do not apply more than 14 days before planting. Improper incorporation, excessive crop residues, or poor soil tillage may result in erratic, streaked, or otherwise unsatisfactory weed control. Avoid moving or shaping soil after incorporation. If two passes are used to incorporate **Volley**, the second pass should be shallower and at an angle to the first pass.

Preemergence Surface: **Volley** and certain tank mixes may be applied to the soil surface as a broadcast or banded application. Existing soil moisture, irrigation, or rain is necessary to bring **Volley** into contact with germinating seeds. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe, or similar device, to incorporate the herbicide. Care should be taken not to remove **Volley** from the weed control zone such as the band. The device used should be run at a shallow depth to prevent disturbing the corn seed.

Postplant-Preemergence: **Volley** and certain tank mixes may be applied after planting but prior to corn emergence. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe, or similar device, to incorporate the herbicide. Care should be taken not to remove **Volley** from the weed control zone. The device used should be run at a shallow depth to prevent disturbing the germinating corn.

Banding-Preemergence: **Volley** and certain tank mixtures may be applied in a 10 to 14 inch band after corn planting but prior to corn emergence. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe or similar device to incorporate the herbicide. Be careful not to move **Volley** from the band or dilute it with untreated soil. Do not disturb the germinating corn.

Early Postemergence: **Volley** may be used early postemergence (up to 11" tall) in corn. Applications must be made prior to weed seedling emergence or in a tank mixture that controls the emerged weeds. Read and follow restrictions and directions on tank mix product labels.

Fall Application - For use in IA; IL (North of Route 136); NE (North of Route 20); MN; ND; SD; WI: Following soybean harvest, apply to soybean stubble after October 15, when the sustained soil temperature at 4-inch depth is less than 50°F, but before ground freezes. Use on medium and fine textured soils with greater than 2.5% organic matter. Only corn may be planted the following spring.

Ground may be tilled before or after application. Do not exceed 2-inch incorporation depth if tilled after application.

If a spring application is made, the total rate of the fall plus spring application must not exceed the maximum labeled rate for corn grown on that soil.

Sprinkler Irrigation: Do not apply **Volley** by sprinkler irrigation. Use a sprinkler system only to incorporate **Volley** after applying by ground equipment. After **Volley** has been applied, a sprinkler irrigation system set to deliver 1/4 to 3/4 inches of water per acre may be used to activate the product. Using more than 3/4 inches of water could result in reduced performance. On sandy soil low in organic matter, use no more than 1/2 inch of water. Do not use flood irrigation to apply or activate **Volley**.

Planting

Planting should be done within 30 days of application of **Volley**. This allows **Volley** to provide effective weed control during the time it is most critical in the production of corn.

Cultivation

If rotary hoeing is necessary due to soil crusting or compaction, adjust equipment to run shallow and minimize soil movement. This will decrease the possibility of diluting or moving the herbicide from the weed control zone. Should weeds develop, a shallow cultivation or rotary hoeing will generally result in improved weed control.

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Soil Texture and Organic Matter

The soils are grouped into three classes: coarse, medium, and fine. Once the soil type has been determined, the texture group can be found in Table 1.

Table 1: Soil Texture Groupings for *Volley* Use Rate Selection.

Coarse	Medium	Fine
Sand Loamy Sand Sandy Loam	Loam Silt Silt Loam Sandy Clay Loam	Silty Clay Loam Silty Clay Sandy Clay Clay Loam Clay

The soil texture and organic matter of the field on which the application is to be made must be known prior to application to select the correct rate. The use rate of *Volley* is determined by a combination of these two factors.

Use Rates in Conventional Tillage Systems

The soil texture and organic matter level of the field on which *Volley* is to be applied should be determined prior to selecting the rate from Table 2.

Table 2: *Volley* Use Rates by Soil Texture and Organic Matter Content in Conventional Tillage Systems. Rates are in pints per acre.

Soil Texture	Soil Organic Matter Content		
	Less than 3%	3% or Greater	Greater than 7%
Coarse	1 1/2 - 2 1/4 pt	1 1/2 - 2 1/2 pt	2 - 3 pt
Medium	1 1/2 - 2 1/2 pt	1 1/2 - 2 1/2 pt	2 1/2 - 3 3/4 pt
Fine	1 1/2 - 2 3/4 pt	2 - 3 pt	3 - 3 3/4 pt

These rates are for applications from 2 weeks before planting through emergence of the corn. Use Table 3 if applications are made more than 2 weeks prior to planting.

Organic Matter: If the organic matter content of the soil is at the lower end of the range, use the lower rates in the rate range given in Table 2. If the organic matter content is at the upper end of the range, use the higher rates given in the rate range.

Weed Infestation: If the weed infestation is light, use a rate at the lower end of the rate range for the soil texture and organic matter content. If the weed infestation is heavier, use the higher rates in the rate range for the soil texture and organic matter.

Use Rates for Reduced Tillage Systems

Volley may be used in reduced and no-till systems. Application can take place from up to 30 days prior to planting or after planting. The highest levels of control will be obtained when applications are made as close to planting as possible but before the weeds emerge. Apply a residual herbicide like AAtrex herbicide, Bledex herbicide, or Extrazine herbicide with *Volley* in reduced or no-till systems. If weeds are present at application, a burndown herbicide like Gramoxone Extra, Touchdown, or 2,4-D may be added to the tank mixture.

Table 3: *Volley* Use Rates by Soil Texture and Organic Matter Content in Reduced and No-Till Systems. Rates are in Pints per acre.

Soil Texture	Soil Organic Matter Content		
	Less Than 3%	3% or Greater	Greater than 7%
Coarse	2 pt	2 pt	2 - 3 pt
Medium	2 - 2 1/2 pt	2 1/2 pt	2 1/2 - 3 3/4 pt
Fine	3 pt	3 pt	3 - 3 3/4 pt

Rates are for single applications. *Volley* may be split applied. If the rate is split, apply 60% of the recommended rate up to 30 days before planting. The remaining 40% should be applied after planting.

Band Applications

For band applications, use row and band-width measurements in inches to calculate the amount to be applied per acre as follows:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Rate per acre for a broadcast treatment} = \text{Amount needed for a band treatment}$$

Weeds Controlled

Volley, applied as directed in this label, will provide control or partial control (reduce competition) of the weeds listed in Table 4. Partially controlled weeds will be severely stunted, or experience reduced height, vigor, or population compared to untreated areas. Depending on the infestation level or density, a follow-up treatment with another herbicide registered for use on corn may be needed to provide complete control.

Additional weeds may be controlled with certain tank mixes. See the "Tank Mix Combinations" section for recommended tank mix combinations and the additional weeds controlled. Always consult the tank mix product labels for specific rates and use directions. Always follow the most restrictive label when tank mixing *Volley* with another product.

TABLE 4: Weeds Controlled or Partially Controlled by *Volley* at Recommended Use Rates.

Common Name	Weed Type ¹	Scientific Name	C = Control PC = Partial Control
Black nightshade	B	<i>Solanum nigrum</i>	C
Carpetweed	B	<i>Mollugo verticillata</i>	C
Common ragweed	B	<i>Ambrosia artemisiifolia</i>	C
Florida beggarweed	B	<i>Desmodium tortuosum</i>	C
Florida pusley	B	<i>Richardia scabra</i>	C
Gallinsoga	B	<i>Gallinsoga parviflora</i>	C
Hairy nightshade	B	<i>Solanum sarachoides</i>	C
Kochia	B	<i>Kochia scoparia</i>	PC
Lambequarters, common	B	<i>Chenopodium album</i>	C ²
Pigweed	B	<i>Amaranthus</i> spp.	C
Prickly sida	B	<i>Sida spinosa</i>	C
Purslane, common	B	<i>Portulaca oleracea</i>	C
Smartweed spp.	B	<i>Polygonum</i> spp.	C

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Common Name	Weed Type ¹	Scientific Name	C = Control PC = Partial Control
Common waterhemp	B	<i>Amaranthus rudis</i>	C
Tall waterhemp	B	<i>Amaranthus tuberculatus</i>	C
Barnyardgrass	G	<i>Echinochloa crus-galli</i>	C
Bristly foxtail	G	<i>Setaria verticillata</i>	C
Broadleaf signalgrass	G	<i>Brechleria platyphylla</i>	C ⁴
Browntop panicum	G	<i>Panicum fasciculatum</i>	C
Crabgrass	G	<i>Digitaria spp.</i>	C
Crowfootgrass	G	<i>Dactyloctenium aegyptium</i>	C
Fall panicum	G	<i>Panicum dichotomiflorum</i>	C
Field sandbur	G	<i>Cenchrus incertus</i>	PC
Foxtail millet	G	<i>Setaria italica</i>	C
Giant foxtail	G	<i>Setaria faberi</i>	C
Goosegrass	G	<i>Elousine indica</i>	C
Green foxtail	G	<i>Setaria viridis</i>	C
Prairie cupgrass	G	<i>Eriochloa contracta</i>	C
Red rice	G	<i>Oryza sativa</i>	C
Red sprangletop	G	<i>Leptochloa filiformis</i>	C
Robust foxtail (purple, white)	G	<i>Setaria spp.</i>	C
Seedling johnsongrass	G	<i>Sorghum halepense</i>	PC
Shattercane	G	<i>Sorghum bicolor</i>	PC
Southern sandbur	G	<i>Cenchrus echinatus</i>	C
Southwestern cupgrass	G	<i>Eriochloa gracilis</i>	C
Texas panicum	G	<i>Panicum texanum</i>	C ⁴
Wild proso millet	G	<i>Panicum miliaceum</i>	PC
Witchgrass	G	<i>Panicum capillare</i>	C
Woolly cupgrass	G	<i>Eriochloa villosa</i>	PC
Yellow foxtail	G	<i>Setaria lutescens</i>	C
Yellow nutsedge ²	S	<i>Cyperus esculentus</i>	C

¹ B = Broadleaf; G = Grass; S = Sedge
² Yellow nutsedge requires a minimum of 2 1/2 pints. Incorporation will improve control.
³ Light to moderate infestations will be controlled. Heavy infestations may require a tank mixture or sequential herbicide.
⁴ Best control is achieved when **Volley** is applied within 5 days of planting and rainfall occurs shortly after application or mechanical incorporation is used to activate the herbicide. If it does not rain within 7 days, shallow cultivation will enhance activity. Excessive rainfall after application may reduce control. Under adverse weather conditions and/or heavy infestations, a cultivation or follow-up herbicide may be needed

Volley Tank Mix Combinations

Use of Spray Adjuvants

Volley is a preemergence herbicide for which spray adjuvants have little or no influence on performance. However, several herbicides used in tank mixtures with **Volley** require use of adjuvants to aid in the burndown of emerged weeds. Use only those adjuvants to aid in the burndown of emerged weeds. Use only those adjuvants approved for agricultural crop use. Surfactants and/or low rate fertilizer (28%, 30% or 32% UAN or ammonium sulfate) adjuvants may be used with tank mixes applied preplant or preemergence to the crop.

Preemergence Tank Mix Combinations

Tank mix combinations may be used in either conventional, reduced, or no-till systems and be applied by the same methods and at the same timings as **Volley** unless otherwise specified in the tank mix product label. Three way or multiple tank mixtures are allowed if not restricted by the respective product labels. Check all tank mix product labels for proper rates for 3 way or multiple tank mixes.

Volley & Atrazine, Bladex or Banvel/Clarity Herbicide:
 Check the atrazine label, county extension office, or state university for the recommended use rate in your area. **Volley** is more active on broadleaf weeds and atrazine rates can be reduced up to 30% while maintaining control of target broadleaf weeds.

Tank mixtures with atrazine will increase the spectrum of weeds controlled. Where AAtrex herbicide formulations have been specified, other brands of atrazine may be used. Read and follow all atrazine label directions and restrictions. Table 5 provides a list of the weeds controlled or partially controlled by atrazine or Bladex in combination with **Volley**.

Use Banvel tank mixture on flat-planted field corn (no furrows) in IL, IN, IA, MN, NE, OH, SD, and WI ONLY to control the weeds listed in Table 5. Read and follow all precautions and directions for use on the Banvel label.

Apply **Volley** + Banvel preemergence. Tank mix 1 pt/acre Banvel with the recommended rate of **Volley** for medium or fine textured soils. Do not apply this tank mix on coarse textured soils with less than 2% organic matter.

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Table 5: Weeds Controlled (C) or Partially Controlled (PC) by Atrazine or Bladex

Common Name	Weed Type ¹	Atrazine	Bladex	Barvel/Clarity
Morningglory spp.	B	C	C	PC
Cocklebur	B	C	PC	PC
Groundcherry spp.	B	C	-	-
Jimsonweed	B	C	C	PC
Kochia	B	C	C	-
Mustards	B	C	C	C
Giant Ragweed	B	C	C	C
Sicklepod	B	C	C	PC
Velvetleaf	B	C	PC	PC

¹ B = Broadleaf; G = Grass

Caution: Following many years of continuous use of atrazine and chemically related products, biotypes of some of the weeds listed above have been reported which cannot be effectively controlled by atrazine and related herbicides. Where this is known or suspected and weeds controlled by atrazine are expected to be present along with resistant biotypes, it is recommended that atrazine be used in combinations or in sequence with other registered herbicides which are not triazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide.

In certain atrazine management areas, atrazine rates are further restricted due to potential groundwater or surface water contamination. If rates in this table exceed the rate of application allowed in your area - use the lower rate. Consult your county extension office or state university for further information.

Valley. Additional Tank Mix Combinations

Tank Mixes	Rate (max)	Comments
Balance herbicide	See label for Balance label for use rates	<ul style="list-style-type: none"> Not labeled in all states; please refer to the label for Balance for precautionary statements, directions for use, geographic and other restrictions Field corn only Refer to Valley use rate section for minimum Valley use rates
Eradicane 6.7-E or Sutan+ 6.7-E herbicide	4 - 6 pt/acre	<ul style="list-style-type: none"> Tank mix with 1-1 1/2 pints Valley Improved grass control Must be incorporated
Extrazine herbicide	See Label	<ul style="list-style-type: none"> Mixture of Bladex and atrazine
Gramoxone Extra herbicide	3 pt/acre	<ul style="list-style-type: none"> Controls emerged annuals, suppresses perennials
Lorox DF herbicide	See Label	<ul style="list-style-type: none"> Enhanced lambequarter and pigweed control
Princep 4L herbicide	See Label	<ul style="list-style-type: none"> Improved crabgrass or fall panicum control
Prowl herbicide	See Label	<ul style="list-style-type: none"> Triazine resistant weeds Velvetleaf Preemergence only
Pursuit herbicide	See Label	<ul style="list-style-type: none"> Tolerant corn hybrids required
Touchdown herbicide	6.33 pt/acre	<ul style="list-style-type: none"> Controls annuals and some perennials
Warrior insecticide	3.84 fl oz/acre	<ul style="list-style-type: none"> For control of many insects such as cutworm.

Valley & Gramoxone Extra, Touchdown, 2,4-D

In reduced or no-till corn, Gramoxone Extra, Touchdown, and/or 2,4-D will burn down existing weeds. Gramoxone Extra should be applied to emerged weeds when they are small. Weeds 1 to 6 inches in height are the easiest to control. Large weeds may be more difficult to control. Tank mixes with atrazine and Bladex will often aid in control of difficult weeds. Consult the Gramoxone Extra, Touchdown, or 2,4-D product label for further information on weeds controlled.

Gramoxone Extra is a Restricted Use pesticide. Refer to the label for Gramoxone Extra for rates, directions, precautions, and limitations relative to its use.

Postemergence Tank Mix Combinations

Valley may be applied before, with, or following the use of one or more of the following herbicides: Accent, Accent Gold, Alm, atrazine, Barvel, Basis, Basis Gold, Beacon, Bladex, Buctril, Buctril/atrazine, Clarity, Distinct, Exceed, Extrazine II, Headline, Liberty, Lightning, Markman, Peak, Permit, Poast (Plus and HC), Princep, Prowl, Pursuit, Scorpion III, Shotgun, and Spirit. Read the other product label(s) for directions for use, precautions and restrictions, and a list of weeds controlled. **Valley** may be tank mixed with any product approved for use on corn unless it is prohibited on the other manufacturer's label.

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When tank mixed, read the other product label and follow the additional use directions given in this table:
Volley can be applied to corn up to 11" tall

Volley Plus:

Product	Rate	Comments																
Accent Gold herbicide	2.9 oz/acre	<ul style="list-style-type: none"> Always add crop oil concentrate at 1% v/v. An ammonium nitrogen fertilizer is also recommended. 																
Accent 75WDG herbicide Beacon 75WDG herbicide Basis herbicide	1/4 - 2/3 oz/acre 0.76 oz/acre 1/4 - 2/3 oz/acre	<ul style="list-style-type: none"> Minimum Volley use rates (pt/acre): <table border="1"> <tr> <td>Soil</td> <td><3%OM</td> <td>3-7%OM</td> <td>>7%OM</td> </tr> <tr> <td>Coarse</td> <td>1.5</td> <td>1.5</td> <td>2</td> </tr> <tr> <td>Medium</td> <td>1.5</td> <td>1.5 - 2</td> <td>2</td> </tr> <tr> <td>Fine</td> <td>1.5</td> <td>1.5 - 2</td> <td>2</td> </tr> </table> Always add NIS at .25% (v/v); and in addition if applied in dry conditions, add 4% (v/v) clear liquid fertilizer. Barvel, Clarity, Marksman, Buctril, Buctril/atrazine may be added to this mixture to provide burndown and residual control of broadleaf weeds. 	Soil	<3%OM	3-7%OM	>7%OM	Coarse	1.5	1.5	2	Medium	1.5	1.5 - 2	2	Fine	1.5	1.5 - 2	2
Soil	<3%OM	3-7%OM	>7%OM															
Coarse	1.5	1.5	2															
Medium	1.5	1.5 - 2	2															
Fine	1.5	1.5 - 2	2															
Aim herbicide	0.3 oz/acre	<ul style="list-style-type: none"> Always add a NIS at 0.25% v/v. 																
Atrazine herbicide	0.5 - 2.0 lb ai/acre	<ul style="list-style-type: none"> Preplant surface, preplant incorporated, preemergence or early postemergence (up to 8" tall corn). If emerged weeds are greater than 1.5 inches tall at the time of application, add an appropriate postemergence herbicide. 																
Barvel herbicide Clarity herbicide Marksman herbicide	0.5 - 1 pt/acre 8 - 16 oz/acre 2 - 3.5 pt/acre	<ul style="list-style-type: none"> Apply preplant or preemergence in reduced/no-till systems. Preemergence on all soils; medium and fine textured with >2% OM. Early postemergence up to 8" tall corn on all soils. If grasses are more than 2-leaf stage, combine with another herbicide to control these weeds. 																
Basis Gold herbicide	14 oz/acre	<ul style="list-style-type: none"> Minimum Volley use rates (pt/acre): <table border="1"> <tr> <td>Soil</td> <td><3%OM</td> <td>3-7%OM</td> <td>>7%OM</td> </tr> <tr> <td>Coarse</td> <td>1.5</td> <td>1.5</td> <td>2</td> </tr> <tr> <td>Medium</td> <td>1.5</td> <td>1.5-2</td> <td>2</td> </tr> <tr> <td>Fine</td> <td>1.5</td> <td>1.5-2</td> <td>2</td> </tr> </table> Always add crop oil concentrate at 1.0% v/v or under dry arid conditions, 2.0% v/v and 28% liquid nitrogen at 2 qt/acre or ammonium sulfate at 2 lb/acre. Barvel, Clarity, Marksman, Buctril, Scorpion III, or Tough herbicide may be added to this mixture to provide burndown and residual control of broadleaf weeds. 	Soil	<3%OM	3-7%OM	>7%OM	Coarse	1.5	1.5	2	Medium	1.5	1.5-2	2	Fine	1.5	1.5-2	2
Soil	<3%OM	3-7%OM	>7%OM															
Coarse	1.5	1.5	2															
Medium	1.5	1.5-2	2															
Fine	1.5	1.5-2	2															
Bledex herbicide Extrazine II herbicide	1.0 - 2.0 lb ai/acre 1.0 - 2.0 lb ai/acre	<ul style="list-style-type: none"> Postemergence (up to 4-leaf stage of corn) but before weeds are more than 1.5" tall. Apply in water only. Do not spray emerged corn plants with a mixture containing liquid fertilizer. These mixtures are not recommended on sand or loamy sand soils with less than 1% organic matter. 																
Buctril herbicide Buctril/atrazine herbicide Shotgun herbicide	1.5 pt/acre 2 pt/acre 2 - 3 pt/acre	<ul style="list-style-type: none"> Refer to product label for use directions. Refer to label for Shotgun for timing and use directions. 																
Distinct herbicide	4-6 oz/acre	<ul style="list-style-type: none"> Always add a NIS at 0.25% v/v and 1.25% UAN. Can be applied up to 10 inch corn. 																
Exceed herbicide	1.0 oz/acre	<ul style="list-style-type: none"> Always add crop oil concentrate at 1% v/v. See label for geographic restrictions. 																
Liberty herbicide	16 - 28 oz/acre	<ul style="list-style-type: none"> For use on Liberty tolerant corn only. Apply until the corn is 24" tall or in the V-7 stage of growth. Apply to grass and broadleaves up to 6" tall. Do not add additional surfactant. 																
Lightning herbicide	1.28 oz/acre	<ul style="list-style-type: none"> For use on III corn only. Use a NIS at .25% v/v and a liquid nitrogen fertilizer at 1-2 qt per acre or ammonium sulfate at 2.5 lb per acre. 																
Poast Plus herbicide Poast HC herbicide	16 - 24 oz/acre 7.0 - 10.5 oz/acre	<ul style="list-style-type: none"> For Use only on Sethoxydim resistant (SR) field corn. Use for postemergence control of certain annual and perennial grass weeds. Add Dash HC or crop oil concentrate. Severe crop injury will occur to corn hybrids not labeled as SR corn. 																
Princep herbicide	1.0 - 3.0 lb ai/acre	<ul style="list-style-type: none"> Preplant surface, preplant incorporated, preemergence to corn. 																
Prowl 3.3 EC herbicide	1.8 - 3.6 pt/acre	<ul style="list-style-type: none"> Preemergence to early postemergence (up to 3" tall corn) but before weeds are more than 1" tall. 																
Pursuit 2.5L herbicide Pursuit 70DG herbicide	4 fl oz/acre 1.4 fl oz/acre	<ul style="list-style-type: none"> Use only on Pursuit resistant (IR) or tolerant (IT) varieties. Apply preplant surface, preplant incorporated, preemergence or early postemergence (up to 3" tall weeds). 																

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Product	Rate	Comments
Resource herbicide	4 - 6 oz/acre	• Apply up to 10 leaf corn to weeds less than 5" tall. Add a crop oil concentrate at 1-2 pt/acre and either 28% nitrogen at 2% v/v or ammonium sulfate at 2.5 lb/acre. May cause some burn or spotting to corn leaves.
Spirit herbicide	1.0 oz/acre	• Always add crop oil concentrate at 1% v/v. • See label for geographic restrictions.
2,4-D Ester herbicide	See label	• Apply preplant surface or preemergence to control emerged broadleaf weeds in corn.
Warrior insecticide	1.92-3.84 fl oz/acre	• For control of many insects such as cutworm and stalk borer.

Volley Physical Data

- Specific Gravity: 1.10 at 68°F (20°C)
- Pounds/Gallon: 9.16 at 68°F (20°C)
- Flash Point: 167°F
- Viscosity: Sprayable to minus 20°F (-29°C)

Appendix I

Procedure for Testing the Compatibility of Volley and Tank Mixes with Fluid Fertilizers

Since fluid fertilizers vary, the following procedure is suggested for determining whether Volley may be combined with a specific fluid fertilizer for spray tank application.

Materials Needed:

- Volley and any tank mix products
- Fluid fertilizer to be used
- Adjuvant for fertilizer tank mix: Use any adjuvant cleared for use on growing crops under 40 CFR 180.1001 to improve the compatibility of Volley with fluid fertilizers. The adjuvant that provides the best emulsification depends on the specific fertilizer under consideration.
- Two 1 quart, wide mouth glass jars with lid or stopper
- Measuring spoons (a 25 ml pipette or graduated cylinder provides more accurate measurement)
- Measuring cup, 8 ounces (257 ml)

Procedure:

1. Pour a pint (about 473 ml) of the fluid fertilizer into each of the quart jars.
2. Add Volley and any tank mix combination to the jars. The order of addition is wettable powders first with mixing, followed by flowables with mixing and the EC's last. The rate of wettable powders and dry flowables is 1 1/2 teaspoon per pound of product per acre to be applied. EC's should be added at the rate of 1/2 teaspoon for each pint per acre to be applied. Premixing the wettable powders in 1 ounce of water before adding to the pint of fluid fertilizer will improve the compatibility of the final mixture.
3. Add 1/2 teaspoon (2 ml) adjuvant to one of the jars, label it as "with", and mix. The rate of 1/2 teaspoon per pint is equal to 3 pints of adjuvant per 100 gallons of fluid fertilizer.
4. Close both jars with lids or stoppers and mix the contents by turning the jars upside down ten times.
5. Inspect the surface and body of the mixtures-
 - (a) Immediately after completing the jar inversions
 - (b) After allowing the jars to stand quietly for 30 minutes
 - (c) And then again after turning the jars upside down 10 times after the 30 minute inspection

Evaluation:

If either mixture remains uniform for 30 minutes, the combination may be used. Should either mixture separate after 30 minutes, but readily remix uniformly with 10 jar inversions, the mixture can be used if adequate agitation is maintained in the tank. If the mixture with adjuvant is satisfactory but the one without adjuvant is not, be sure to use the adjuvant in the spray tank. Add the adjuvant first at a rate of 3 pints per 100 gallons of fluid fertilizer. Foaming may be minimized by using moderate agitation. If non-dispersible oil, sludge, or clumps of solids form in the mixtures, the combination should not be used.

Appendix II

Dry Bulk Fertilizer Impregnation

All individual state regulations relating to dry bulk fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the Volley, Volley plus atrazine, or Volley plus Bladex fertilizer mixtures.

When applying Volley alone or in tank mixes with dry bulk fertilizers, follow all directions for use and precautions on the respective tank mix product labels regarding rates, soil texture, application methods, and rotational restrictions.

Approved Dry Fertilizer Ingredients for Use with Volley¹

Fertilizer	N	P	K
Ammonium Phosphate-Sulfate	16	20	0
Ammonium Sulfate	21	0	0
Diammonium Phosphate	18	46	0
Monoammonium Phosphate	11	56	0
Potassium Chloride	0	0	60
Potassium Sulfate	0	0	52
Single Superphosphate	0	20	0
Treble Superphosphate	0	46	0
Urea ²	45	0	0

¹ Do not impregnate on fertilizers containing ammonium nitrate, potassium nitrate, or sodium nitrate.

² Some ureas may be phytotoxic when high rates are applied to corn. Use only urea rates known to be safe for corn application.

For impregnating the pesticides on dry fertilizers, use suitable mixers equipped with suitable spraying equipment. The spray nozzles should be positioned inside the mixer to provide uniform spray coverage of the tumbling fertilizer. The Volley should be sprayed uniformly onto the fertilizer using a fine spray pattern. Tank mix components may be applied as separate ingredients with powders and dry flowables added first or they may be mixed in a slurry in the proper ratio and added jointly.

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Volley may also be impregnated on dry bulk fertilizer in the field while the fertilizer is being spread using a pneumatic applicator equipped to impregnate herbicides.

If the herbicide/fertilizer mixture is too wet, use of a drying agent is required to provide a dry, free-flowing mixture. For mixtures to be used in spinning-disk applicators, Micro-Cel E calcium silicate powder (Marrville, Filtration & Minerals) is recommended for use as a drying agent. Mixtures to be used in pneumatic applicators should use Micro-Cel E or Agsorb 18/30 RVM-MS granular clay (Oll-Dri Corporation). The drying agents should be added separately and uniformly to the prepared pesticide/fertilizer mixture, in a quantity that is sufficient to provide a suitable free-flowing mixture. Generally, less than 2% Micro-Cel E or 5% Agsorb 18/30 RVM-MS by weight is required.

The following table provides a reference to determine the amount of **Volley** to be mixed per ton of dry bulk fertilizer for a range of herbicide rates.

Fertilizer Rate (lb/acre)	Acres Covered (per ton)	Volley (pints/acre)		
		2	2.5	3
		p/acre	p/acre	p/acre
Pints Herbicide/Ton Fertilizer				
200	10.0	20.0	25.0	30.0
300	6.7	13.4	16.8	20.1
400	5.0	10.0	12.5	15.0
500	4.0	8.0	10.0	12.0
600	3.3	6.6	8.3	9.9
700	2.9	5.8	7.3	8.7

To determine the amount of **Volley** needed for other rates of fertilizer, use this formula:

$$\frac{\text{Volley (pints/acre)}}{\text{Pounds of fertilizer/acre}} \times 2000 = \text{Pints of Volley per ton of fertilizer}$$

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