

PM 22 7969-149 2-10-98 10/8 U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (75-767) WASHINGTON, DC 20480		EPA REGISTRATION NO. 7969-149	DATE OF ISSUANCE FEB 10 1998
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREISTRATION <i>(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)</i>		TERM OF ISSUANCE conditional	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code) Robert Rohde BASF Corporation Agricultural Products PO Box 13528 Research Triangle Park, NC 27709		NAME OF PESTICIDE PRODUCT Pix Ultra Plant Regulator	
<p>NOTE: Changes in labeling formula 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 U.S. EPA registration number.</p>			
<p>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.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this 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.</p> <p>This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:</p> <ol style="list-style-type: none"> 1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) and sec. 4 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: <ol style="list-style-type: none"> a. Add the phrase, "EPA Registration No. 7969-149." b. Under the Precautionary Statements section of the label, add the following statements: "Harmful if absorbed through skin." "Wash thoroughly with soap and water after handling." c. Insert a First Aid section on front panel of label, and include the following statement. "IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists." 			
<input type="checkbox"/> ATTACHMENT IS APPLICABLE		SIGNATURE OF APPROVING OFFICIAL DATE	
[Signature]		FEB 10 1998	

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3. Submit one (1) copy of your final printed labeling 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.

Enclosure

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BASFRT 11-3-97
REDACCEPTED
with COMMENTS
In EPA Letter Dated
FEB 10 1998Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
7969-149

Pix[®] Ultra

plant regulator

Active ingredient*

Mepiquat Chloride:

N,N-dimethylpiperidinium chloride 3.9%

Inert ingredients 96.1%**Total** 100.0%

* Equivalent to 0.35 pounds active ingredient per gallon.

EPA Reg. No. 7969-52

EPA Est. No. 34313-TX-01

KEEP OUT OF REACH OF CHILDREN.**CAUTION****Precautionary Statements****Hazards to Humans and Domestic Animals**

Avoid contact with eyes, skin, or clothing. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

Environmental Hazards

For terrestrial uses, 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 washwaters.

Agricultural Use RequirementsUse this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the **Directions For Use** for information about this standard.**Net contents: 1 gallon**BASF Corporation
P.O. Box 13528, Research Triangle Park, NC 27709-3528

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Personal Protective Equipment: Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

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.

Engineering Controls Statement

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.

Directions For Use

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

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.

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
- Shoes plus socks

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

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 container (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. If burned, stay out of smoke.

In Case of Emergency

In case of large-scale spillage regarding this product, call: CHEMTREC800-424-9300
BASF Corporation ..800-832-HELP
In case of medical emergency regarding this product, call:

1. Your local doctor for immediate treatment.
2. Your local poison control center (hospital).
3. BASF Corporation 800-832-HELP.

General Information

Pix® Ultra plant regulator is a foliar applied plant regulator which modifies the cotton plant in several beneficial ways. It is the only such compound which allows the grower to manage the cotton plant for **short-season production** leading to reduced risk of yield and quality loss due to delayed and prolonged harvest. The use of **Pix Ultra** will also result in several or all of the following: height reduction and more open canopy; better early boll retention and/or larger bolls; less boll rot; improved defoliation; reduced trash and lower ginning costs; better harvest efficiency; and darker green leaf color. Most of these effects often favorably influence the yield potential of the cotton plant. Applications of **Pix Ultra** have shown to enhance earliness, boll opening, maturity, and potential yield over mepiquat chloride treatments alone.

Early Application of Pix Ultra

On both short-staple and Pima cotton, the grower has the option of low-rate multiple applications, or in higher, less frequent dosages which greatly facilitates his management flexibility. The multiple application option gives the producer the ability to discontinue usage of **Pix Ultra** if any significant stresses occur after an earlier application; in such a case, the total quantity of **Pix Ultra** used over a season may be reduced. If stress is relieved, the grower has the option of continuing treatments with **Pix Ultra**. In addition, the rate and timing ranges indicated allow the grower to tailor his usage of **Pix Ultra** to the degree of vegetative vigor in a given field. In areas where insecticides/miticides or foliar fertilizers are frequently applied, the timings are such that tank-mixing is often possible. (**See Restrictions and Limitations**) Fields should be carefully scouted and **Pix Ultra** should not be applied if plants are under severe stress from weather factors, mite, insect or nematode damage, disease stress, herbicide injury, or fertility stress.

In the absence of these stresses, up to five low-rate multiple applications could be made each season. After the first application (at match-head square in the absence of stress), the rate and timing of subsequent applications will depend on vegetative vigor; under good growing conditions, additional treatments (1/8-1/4 pint per acre) should be made at 7-14 day intervals. However, if new growth at any time

is excessive, higher rates of **Pix® Ultra plant regulator** ($1/4$ - $3/4$ pint per acre) can be used.

Do not exceed a total seasonal use of 3 pints per acre.

If significant loss of squares and/or young bolls has occurred earlier due to insect pressure or other stresses, but now these stresses have been alleviated, the need for **Pix Ultra** is increased - excess vegetative growth is likely because of poor fruit load.

Late Season Application of Pix Ultra

Late application of **Pix Ultra** (approximately during the fourth to sixth week of blooming) can provide certain benefits to cotton. However, it should not and does not substitute for early season use, the time of the greatest benefit from the use of **Pix Ultra**. Late season application can lead to one or more of the following: reduction in late season vegetative growth or regrowth after cutout or defoliation, more complete and manageable cutout, better defoliation, earlier maturity and reduction in trash and lower ginning costs. Some of these effects may favorably influence the yield potential and fiber quality. A late season application of **Pix Ultra** should be applied only if fields are not drought or nutrient stressed; that is, those fields likely to experience additional vegetative growth or regrowth. However, fields that are very rank and extremely vigorous due to a combination of poor boll load and excellent growing conditions may not respond as much as desired to late season applications at the suggested rates.

Timing for Late Season Applications

- A. On fields where cotton cuts out and then starts regrowth: apply when regrowth begins, as evidenced by new leaves in the terminal and stem elongation. This would often, but not always, be in the period of 5-6 weeks after the first bloom.
- B. On fields where cotton never completely cuts out, apply **Pix Ultra** when there are 4-6 nodes above the white flower (NAWF). Measure NAWF by counting the number of mainstem nodes from the first position white bloom (the one closest to the mainstem) to the terminal. Count the node with the first position white bloom as zero and the last node in the terminal, which is counted, should have a leaf at least the size of a quarter. Generally, the NAWF first

reaches 4-6 during the fourth to sixth week of bloom. During this time period, the NAWF should be decreasing about one node every 5-6 days - if its rate of decrease is less, this means that the plant is not cutting out soon enough (the crop is too vigorous). If the fifth week of bloom arrives and NAWF is still above 5-6, apply **Pix Ultra**.

Use Rate for Late Season Application

Pix Ultra should be applied at a rate between $1/2$ pint to $1 1/2$ pints per acre. Use the lower rate range on cotton with only moderate additional growth potential, and the higher rate range on fields likely to continue vigorous growth. Total seasonal use per season (early plus late application) must not exceed 3 pints per acre.

Spray Volume Water as Diluent

Ground and aerial application: When applying **Pix Ultra** with ground equipment, in all states but California, use a minimum of 2 gallons of water per acre; in California, use a minimum of 5 gallons per acre. For aerial application in all states but California, use a minimum of 2 gallons of water per acre; in California, use a minimum of 5 gallons per acre. Regardless of method or gallonage of application, thorough coverage of the cotton foliage is required.

Oil as Diluent

Ultra low volume (ULV) aerial application

Only permitted in the following states: AL, AR, FL, GA, LA, MO, MS, NC, OK, SC, TN, TX. A nonphytotoxic oil concentrate (commonly referred to as oil concentrate) should always be added to the spray tank as recommended. The oil concentrate must contain either a petroleum or vegetable oil base and must meet the following criteria: 1) be nonphytotoxic, 2) contain only EPA-exempt ingredients, 3) provide good mixing quality in the jar test, and 4) be successful in local experience. The exact composition of suitable oil concentrates will vary, however, vegetable and petroleum oil concentrates should contain emulsifiers that provide good mixing quality. If the oil does not contain an emulsifier, one must be added during mixing at a volume equal to 3% of the final volume of the mixing tank. Do not apply **Pix Ultra** ULV without using emulsifiers. It is recommended that vegetable oils be highly refined.

Mixing Directions Oil as Diluent

While agitating, pour approximately one-half of the required volume of oil (total final spray solution at least 2 pints per acre) into the mixing tank, followed by the emulsifier (if the oil does not already contain one) at approximately 3% of the final spray tank volume, and then simultaneously pour in the **Pix Ultra** and the remainder of the oil. Only moderate agitation should be employed while mixing and transporting.

Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

The distance of the outer most nozzles on the boom must not exceed $3/4$ the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

Information On Droplet Size.

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature, and Humidity, and Temperature Inversions).

Controlling Droplet Size

Volume: Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure: Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types

Time and Rate of Application:**Short-Staple and Long-Staple (Pima) Cotton**

The times and rates of application have been carefully researched and the **Directions For Use** should be observed as specified below. Do not apply more than 3 pints of Pix* Ultra plant regulator per acre, per season. **High Rate Single Multiple Applications**

Geographic Area	Time of Application	Rate Per Acre
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NM, NC, SC, TN, VA	First application: Apply when cotton is actively growing and is 20-30" tall, provided cotton is not more than 7 days beyond early bloom stage (5-6 blooms per 25 row feet). If cotton is 24" tall and has no blooms, apply Pix Ultra. Use 1/2 pint per acre on cotton where excessive vegetative growth is not likely to be a problem, and 1 pint per acre in areas tending to have excessive vegetative growth. See Restrictions and Limitations .	1/2-1 pint
	Second application for control of excessive vegetative growth: If the cotton field has a history of vigorous growth or if conditions after the first application of Pix Ultra favor vigorous growth, apply a second application 2-4 weeks after the first application.	1/2-1 pint
	Third application for control of excessive vegetative growth: If the cotton field has a history of vigorous growth or if conditions continue to favor vigorous growth, apply a third application 1-2 weeks after the second application.	1/2-1 pint
	Late season application: See section titled Late Season Application of Pix Ultra .	1/2-1 1/2 pints
OK, TX (except Rio Grande Valley)	Areas where excessive vegetative growth is not a problem First application: Apply when cotton is in early bloom stage (5-6 blooms per 25 row feet) and actively growing. If no blooms are present and the cotton is 20" tall and actively growing, apply Pix Ultra. See Restrictions and Limitations .	1/2 pint
	Second application: If conditions after the first application of Pix Ultra favor vigorous growth, apply a second application 2-4 weeks after the first application.	1/2 pint
	Third application: If conditions after the second application of Pix Ultra continue to favor vigorous growth, apply a third application 1-2 weeks after the second application.	1/2 pint
	Late season application: See section titled Late Season Application of Pix Ultra .	1/2-1 1/2 pints
OK, TX (including Rio Grande Valley)	Areas where excessive vegetative growth is a problem First application: Apply when cotton is actively growing and 20-30" tall, provided cotton is not more than 7 days beyond early bloom stage (5-6 blooms per 25 row feet). If cotton is 24" tall and has no blooms, apply Pix Ultra.	1 pint
	Second application for control of excessive vegetative growth: If cotton field has a history of vigorous growth, or conditions after the first application of Pix Ultra favor vigorous growth, apply a second application 2-4 weeks after the first application.	1/2-1 pint
	Third application: If conditions after the second application of Pix Ultra continue to favor vigorous growth, apply a third application 1-2 weeks after the second application.	1/2-1 pint
	Late season application: See section titled Late Season Application of Pix Ultra .	1/2-1 1/2 pints

lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles: Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation: Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type: Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger

droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.)

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable

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Low-Rate Multiple Applications

Geographic Area (States)	Time of Application	Fields with Moderate Vegetative Vigor Rate Per Acre	Fields with High Vegetative Vigor Rate Per Acre
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NC, NM, OK, SC, TN, TX, VA	First application: Optimal results will be achieved when plants are in the matchhead square* stage of growth.	1/8 pint	1/4 pint
	Second application: 7-14 days later, or when regrowth occurs.	1/8 pint	1/4 pint
	Third application: 7-14 days later, or when regrowth occurs.	1/8-1/4 pint*	1/4-1/2 pint*
	Fourth application: 7-14 days later, or when regrowth occurs.	1/8-1/2 pint*	1/4-3/4 pint*
	Fifth application: (If needed) — 7-14 days later, or when regrowth occurs.	1/4-1/2 pint*	1/4-3/4 pint*
	Late season: See section titled Late Season Application of Pix Ultra	1/2-1 pint*	3/4-1 1/2 pints*

- * Use higher rates if previous application was not made or if growing conditions are conducive to vigorous growth.
- * Matchhead square is when the first square of a typical cotton plant is 1/8-1/4 inches in diameter. The first application should be applied when 50% of the plants have one or more matchhead squares.

wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Rain-safe Period and**Compatibility****Rain-safe period**

If rain is expected within 8 hours, use a high-quality, EPA-exempt surfactant to make **Pix Ultra** rain-safe after 4 hours.

Compatibility

Pix Ultra has an aqueous base, and as such, is compatible with most insecticides and miticides. If in doubt, test compatibility by adding a teaspoon of the insecticide or miticide to a pint of ready-to-use spray solution of **Pix Ultra**. You may combine **Pix Ultra** with foliar fertilizers if your prior experience has shown the original liquid formulation of **Pix Ultra** to be compatible and noninjurious under your conditions.

Restrictions and Limitations

Significant insect or mite damage after application(s) of **Pix Ultra** plant regulator is likely to eliminate or greatly reduce the benefits derived from **Pix Ultra**.

Do not apply a single application of 1/2-1 pint of **Pix Ultra** to cotton that is drought stressed; i.e., stressed due to lack of soil moisture. If using the low-rate multiple option, discontinue use until the moisture stress is alleviated.

Do not apply more than 3 pints of **Pix Ultra** per acre per season.

The sum of all products and formulations containing meququat chloride must not exceed 0.132 pounds (60 grams) of meququat chloride per acre per season. This maximum equals 3 pints of 4.2% **Pix** or **Pix Ultra** (0.35 pounds per gallon) or 8.4 ounces of **Pix Concentrate** (2.0 pounds per gallon) or 3/8 pounds of **Pix DF** (35%) or 1 water-soluble packet of **Pix DF** per 0.33 acre.

Do not apply **Pix Ultra** within 30 days of harvest.

Do not plant another crop within 75 days of last treatment.

Do not graze or feed cotton forage to livestock.

The blue color of **Pix Ultra** may fade under some conditions; however, effectiveness is not related to color of spray solution or the color of **Pix Ultra**.

Do not tank mix with other products other than those mentioned under **Compatibility**.

Do not apply this product through any type of irrigation system.

Additional Information

For additional information, call
CommServ at 1-800-874-0081.

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 should be followed carefully. However, it is impossible to eliminate all risks inherently associated with 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 CORPORATION ("BASF") or the Seller. 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.

BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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NVA 97-4-24-0124
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