

by Valent BioSciences Corporation, 870 Technology Way, Suite 100, Libertyville, IL 60048. This notice included a summary of the petition prepared by the petitioner Valent BioSciences Corporation. There were no comments received in response to the notice of filing.

The petition requested that 40 CFR part 180 be amended to expand the existing tolerance exemption by establishing a temporary exemption from the requirement of a tolerance for residues of 6-benzyladenine.

Section 408(c)(2)(A)(i) of the FFDCA allows EPA to establish an exemption from the requirement for a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the exemption is "safe." Section 408(c)(2)(A)(ii) of the FFDCA defines "safe" to mean that "there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information." This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) of the FFDCA requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to "ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue..." Additionally, section 408(b)(2)(D) of the FFDCA requires that the Agency consider available information concerning the cumulative effects of a particular pesticide's residues and "other substances that have a common mechanism of toxicity."

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides. Second, EPA examines exposure to the pesticide through food, drinking water, and through other exposures that occur as a result of pesticide use in residential settings.

III. Toxicological Profile

Consistent with section 408(b)(2)(D) of the FFDCA, EPA has reviewed the available scientific data and other relevant information in support of this action and considered its validity, completeness and reliability and the relationship of this information to human risk. EPA has also considered available information concerning the variability of the sensitivities of major

identifiable subgroups of consumers, including infants and children.

The toxicological profile for 6-benzyladenine has been previously published by the Agency in the N6-Benzyladenine (synonymous with the subject active ingredient, 6-benzyladenine) Reregistration Eligibility Decision (RED) document of June 1994 (Ref. 1). The summarized values and categories for the various studies for the technical active ingredient are presented here.

1. *Acute toxicity.* Toxicity Category III was assigned to the acute oral toxicity study in the rat (LD_{50} = 1.3 grams/kilogram (g/kg)), and in the eye irritation study in the rabbit (moderate irritant). Toxicity Category IV was assigned to the acute dermal toxicity study in the rabbit (LD_{50} > 5 g/kg), the acute inhalation toxicity study in the rat (LC_{50} = 5.2 milligrams/liter (mg/L)), and in the dermal irritation study in the rabbit (slight irritant). Additionally, from a dermal sensitization study in the guinea pig, it was determined that N6-benzyladenine is not a dermal sensitizer.

2. *Genotoxicity.* From three mutagenicity studies (Ames test, mouse micronucleus assay, and unscheduled DNA synthesis assay in the rat), it was determined that N6-benzyladenine is not mutagenic.

3. *Developmental toxicity.* The no observed adverse effect levels (NOAEL) and the lowest observed adverse effect levels (LOAEL) for maternal and developmental toxicity in rats, respectively, were found to be 50 and 175 mg/kg of body weight (bwt)/day, respectively.

4. *Subchronic toxicity.* For rats of both sexes, the NOAEL was approximately 111 mg/kg of bwt/day and the LOAEL was approximately 304 mg/kg of bwt/day.

IV. Aggregate Exposures

In examining aggregate exposure, section 408 of the FFDCA directs EPA to consider available information concerning exposures from the pesticide residue in food and all other non-occupational exposures, including drinking water from ground water or surface water and exposure through pesticide use in gardens, lawns, or buildings (residential and other indoor uses).

A. Dietary Exposure

1. *Food.* Apple and pistachio field trials performed in support of the temporary tolerance exemption request and the associated experimental use permit yielded acceptable magnitude of the residue data (Ref. 2). Residues were

below the limit of quantitation (LOQ) for pistachios treated with a total of 60 g of active ingredient (a.i.) per acre. In apples, residues of 6-benzyladenine were consistently near the LOQ. However, residues did not increase in processed commodities (relative to the levels on the raw commodity), and were below the LOQ. Thus, the apple field data are adequate to support the temporary tolerance exemption petition and experimental program to apply ≤ 182 grams of active ingredient per acre per season. Also, because application precedes harvest by 2 months for pistachio and by approximately 2.5 months for apple, the potential for dietary exposure is reduced.

Due to the low anticipated dietary intake of 6-benzyladenine residues relative to the chronic and acute population adjusted doses (see Unit VI, below), and the fact that actual exposure will probably be considerably less because the dietary exposure analysis was based on worst-case assumptions, it is highly unlikely that the proposed new uses of 6-benzyladenine on apples and pistachios will result in adverse effects to human health.

2. *Drinking water exposure.* The proposed uses on apples and pistachios are not expected to add potential exposure to drinking water. Soil leaching studies have suggested that 6-benzyladenine is relatively immobile (Ref. 3), absorbing to sediment. Residues reaching surface waters from field runoff should quickly absorb to sediment particles and be partitioned from the water column. 6-Benzyladenine also has low solubility in water, 76 ± 2 mg/L at 20° C (Ref. 2), and detections in ground water are not expected. Together, these data indicate that residues are not expected in drinking water.

B. Other Non-Occupational Exposure

The potential for non-dietary exposure to 6-benzyladenine residues for the general population, including infants and children, is unlikely because the uses are limited to experimental applications in apple and pistachio orchards. Because 6-benzyladenine is a naturally occurring cytokinin plant regulator (Ref. 4, 5, 6, 7, and 8), it is a normal part of the human diet. The proposed experimental use rates are well below the toxicity NOAELs. The residues indicate dietary exposures that are 0.03% and 0.01% of the chronic and acute population adjusted doses, respectively. Therefore, while there exists a great likelihood of prior exposure for most, if not all, individuals to 6-benzyladenine, any increased exposure due to the proposed