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as effective or more effective except when large numbers of insects entirely coat the strips. Economic impacts from cancellation would be negligible, since monitoring would only be less effective for heavy populations of insects.

14. Commercial, institutional, and industrial areas. Dichlorvos is used primarily as a residual surface spray or space treatment in restaurants, food processing and storage areas, transportation facilities, lodging, schools, and hospitals, to control a variety of insects. There are a variety of alternative chemicals; however, due to the lack of comparative efficacy data or resistance data, EPA assumes these alternatives will provide equal efficacy. Economic impacts are not expected to be significant if dichlorvos is canceled, although there could be a slight increase in costs from use of alternatives.

15. Commercial transportation vehicles—i. Airplanes and buses. Dichlorvos is used primarily as a space treatment in airplanes and buses for the control of a variety of pests including ants, cockroaches, fleas, flies, and quarantine pests. The major alternatives are phenothrin, pyrethrins, and resmethrin all of which are assumed to offer comparable efficacy to dichlorvos. No economic impacts are expected since current dichlorvos use is believed to be minimal.

ii. Trucks, shipholds, and railroad cars. Dichlorvos is used primarily as a space treatment in these vehicles primarily to control a variety of stored product pests. Major alternatives are pyrethrins and resmethrin, and equal efficacy to dichlorvos is assumed. A variety of non-chemical alternatives are available, including sanitation, modified atmospheres, irradiation, and controlled temperatures (hot and cold). Economic impacts are not expected to be significant, based on the availability of alternatives and the similarity in costs.

F. Strengths and Uncertainties of Benefits Assessment

The strengths of the benefits assessment include the identification of pests on which dichlorvos is used, alternative pesticides, methods of application, and application rates. There are also weaknesses in this benefits assessment: specific use and usage information is dated; many dichlorvos labels include a wide range of generalized use sites, making it difficult to describe specific uses (e.g. warehouses); comparative efficacy and product performance data do not exist for dichlorvos and its alternatives; there are no data regarding the number of treatments needed with an alternative to replace dichlorvos treatments; and there are no data regarding pest resistance to alternatives. Because of limited use and usage information, the benefits may be understated for fly control in feedlots, on livestock and livestock premises, and pest control in storage areas.

Little usage information for dichlorvos is available. Products containing dichlorvos come in several formulations, may be applied by several different methods, and can be used in many situations (for example, different types of warehouses); therefore, determining the usage for a particular site is difficult. The lack of comparative efficacy and product performance data also presented problems when trying to compare dichlorvos to the alternatives. This lack of data led the Agency to assume that all products listed would provide adequate control of the pests identified for each site unless otherwise noted. EPA is aware that some of the pests may be resistant to some of the chemicals listed; however, without supporting data the Agency cannot be more specific or come to a more definitive conclusion regarding the effectiveness of the chemicals. Other

areas of difficulty involved determining the amount of product applied per application, the number of treatments needed, and the effect these factors had on the cost per application. For example, dichlorvos products are applied on the basis of cubic feet of space (as a space treatment), per square feet (as a surface treatment), some for a certain length of time, others as crack and crevice or spot treatments, some as baits, and still others directly to animals. This diversity of area treated and the number of applications needed or recommended (for example, based on the season, geographical area, and pests) created difficulties for making comparisons between products. Until more information is made available, the Agency assumes, for most sites, that single treatments are equivalent.

The Agency has no information regarding the use of dichlorvos on the following outdoor sites: Outdoor areas under the general category of farm buildings, outside surfaces of buildings, enclosed outdoor utility equipment, or urban and rural outdoor areas. Due to the complete lack of information, these sites have not been addressed in this assessment document. Table 3 below summarizes the benefits assessment for dichlorvos uses. In aggregate, the overall annual economic impact of a dichlorvos cancellation to users and consumers is expected to be negligible. Furthermore, for most of the individual dichlorvos use sites a number of alternatives are registered and available. Any economic impacts would be expected to diminish over time as uses adjusted to the use of these alternative control materials. EPA's benefits assessment is based on information currently available to the Agency. EPA would consider new information from interested parties that might modify this benefits assessment.