نموذج غلاف مشروع مواصفة قياسية عربية موحدة

المنظمة العربية للتنمية الصناعية والتقييس والتعدين

مركز المواصفات والمقاييس

مشروع مواصفة قياسية عربية موحدة

مدونة ممارسات لمنع وخفض تلوث الأغذية بالرصاص

Code Of Practice For The Prevention And Reduction Of Lead Contamination In Foods

AIDSMO CD CAC/RCP 56 :(2024)

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هذه الوثيقة مشروع لمواصفة قياسية عربية تم عرضها على القاعدة التفاعلية لإبداء الرأي والملاحظات عليها، لذلك فإنها عرضة للتغيير والتبديل ولا يجوز الاعتماد عليها كمواصفة قياسية عربية موحدة إلا بعد اعتمادها من قبل اللجنة العربية العليا للتقييس

مقدمـــــة

المنظمة العربية للتنمية الصناعية والتقييس والتعدين منظمة فنية متخصصة تضم في عضويتها أجهزة التقييس في الدول العربية، ومن مهام المنظمة اصدار المواصفات القياسية العربية الموحدة من خلال لجان فنية عربية متخصصة وبالتعاون مع الجهات ذات العلاقة.

اقترحت الهيئة العامة للغذاء والدواء بالمملكة العربية السعودية هذه المواصفة **(مدونة ممارسات لمنع وخفض تلوث الأغذية بالرصاص)**، وتم إعدادها من قبل اللجنة الفنية TC 9 (اللجنة الفنية العربية لمواصفات منتجات الأغذية).، واعتمدت بقرار اللجنة العربية العليا في اجتماعها (.....).

CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF LEAD CONTAMINATION IN FOODS

CAC/RCP 56–2004

INTRODUCTION

1. Lead is a toxic heavy metal with widespread industrial uses, but no known nutritional benefits. The toxic effects of lead in food have been reviewed several times by the FAO/WHO Joint Expert Committee on Food Additives (JECFA). Chronic exposure to lead at relatively low levels can result in damage to the kidneys and liver, and to the reproductive, cardiovascular, immune, hematopoietic, nervous, and gastrointestinal systems. Short-term exposure to high amounts of lead can cause gastrointestinal distress, anemia, encephalopathy, and death. The most critical effect of low-level lead exposure is reduced cognitive and intellectual development in children.

2. Lead exposure can occur through food and water, as well as in the workplace, through hobbies, and through exposure to lead-contaminated soil and air.

3. Lead contamination of food arises from numerous sources, including air and soil. Atmospheric lead from industrial pollution or leaded gasoline can contaminate food through deposition on agricultural crop plants. Soil lead arising from lead-containing ordnance stored on former munitions sites and from ammunition used in rifle or military firing, atmospheric deposition, or inappropriate application of pesticides, fertilizers, or sewage sludge can contaminate agricultural crop plants through uptake or through deposition of the soil on plant surfaces. Contaminated plants and soil are, in turn, a source of contamination of livestock.

4. Water is also a source of lead contamination of food. Surface water sources can be contaminated through runoff (drainage), atmospheric deposition, and, on a local level, by leaching of lead from game shot or fishing sinkers. Contaminated surface waters are a potential source of contamination of aquatic food animals. For drinking water and water for food preparation, the use of lead pipes or lead-containing fixtures in water distribution systems is a primary source of contamination.

5. Lead contamination of food can also arise from food processing, food handling, and food packaging. Sources of lead in food processing areas include lead paint and lead-containing equipment, such as piping and lead-soldered machinery. In the packaging area, lead-soldered cans have been identified as a very important source of lead contamination of food. Other packaging items that are potential sources of lead contamination include colored plastic bags and wrapping papers, cardboard containers that contain lead or are colored with lead-containing dyes, lead foil capsules on wine bottles, and lead-glazed ceramic, lead crystal, or lead-containing metal vessels used for packaging or storing foods.

6. There have been worldwide efforts to reduce lead exposure from food. Such efforts have focused on implementing standards for allowable lead levels in food and food additives; ending the use of lead-soldered cans, particularly for infant foods; controlling lead levels in water; reducing leaching from lead-containing vessels or restricting their use for decorative purposes; and identifying and reacting to additional sources of lead contamination in foods or dietary supplements. Although not targeted specifically at food, efforts to reduce environmental sources of lead, including restrictions on industrial emissions and restricted use of leaded gasoline, have also contributed to declining lead levels in food.

7. Codex, intergovernmental organization, and many countries have set standards for allowable levels of lead in various foods. Low levels of lead in foods may be unavoidable, because of the ubiquitous nature of lead in the modern industrial world. However, following good agricultural and manufacturing practices can minimize lead contamination of foods. Because many useful interventions for reducing lead rely on actions by consumers, a section with suggestions for modifying consumer practices has also been included in this Code.

1. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)

1.1 Agricultural

8. Leaded gasoline is a major contributor to atmospheric lead. National authorities should consider reducing or eliminating the use of leaded gasoline in agricultural areas.

9. Agricultural lands near industrial facilities, roadways, and ordnance depots, rifle ranges and military firing ranges may have higher lead levels than more isolated lands. Land near buildings with weathered exterior paint also may have high lead levels, a particular concern when such buildings are situated near livestock or small gardens. Where possible, farmers should test lead levels in soils that are near lead sources or that are suspected of having elevated lead levels to determine if lead levels exceed recommendations for planting by local authorities.

10. Farmers should avoid using lands that have been treated with lead arsenate pesticide, such as former orchards, to grow crops that may accumulate lead internally (such as carrots and other root crops) or on their surface (such as leafy vegetables).

11. Farmers should avoid growing crops on lands that have been treated with sewage sludge that does not adhere to maximum allowable lead levels set by national authorities.

12. Leafy vegetables are more vulnerable than non-leafy vegetables or root vegetables to deposition from airborne lead. Cereal grains also have been reported to absorb lead from the air at a significant rate. In areas where atmospheric lead levels are higher, farmers should consider choosing crops that are less vulnerable to airborne deposition.

13. Farmers should avoid using compounds that contain lead (such as lead arsenate pesticide) or may be contaminated with lead (e.g., improperly prepared copper fungicide or phosphate fertilizer) in agricultural areas.

14. Dryers powered with leaded gasoline have been found to contaminate drying crops with lead. Farmers and processors should avoid using dryers or other equipment powered by leaded gasoline on harvested crops.

15. Crops should be protected from lead contamination (e.g., exposure to atmospheric lead, soil, dust) during transport to processing facilities.

16. Home or small-scale commercial gardeners should also take steps to reduce lead contamination. Avoid planting near roadways and buildings painted with lead-based paint. If gardens are located in an area with potentially high lead levels, test soil before planting. Good gardening practices for soils with mildly elevated lead levels include mixing organic matter into the soil, adjusting soil pH to reduce availability of lead to plants, choosing plants that are less vulnerable to lead contamination, and using liners to reduce contact deposition of soil on plants. Some lead levels are considered too high for gardening. It may be possible to build up gardening beds with lead-free soil in such areas. Gardeners should consult with local agricultural services, where available, for advice on what lead levels are too high for gardening and advice on how to garden safely in lead-contaminated soils.

17. Agricultural water for irrigation should be protected from sources of lead contamination and monitored for lead levels to prevent or reduce lead contamination of crops. For example, well water used for irrigation should be properly protected to prevent contamination and routinely monitored.

18. Local and national authorities should make farmers aware of appropriate practices for preventing lead contamination of farmlands.

1.2 Drinking Water

19. National authorities should consider establishing allowable lead levels or appropriate treatment techniques for controlling lead levels in drinking water. The WHO has established a guideline value for maximal lead levels in drinking water of 0.010 mg/L.

20. Administrators of water systems with high lead levels should consider treatment techniques, such as increasing the pH of acidic waters, to minimize corrosion and reduce leaching of lead in the distribution system.

21. Where appropriate, administrators of water systems should consider replacing problematic lead piping and other lead-containing fixtures.

1.3 Food Ingredients and Processing

22. National authorities should consider establishing standards limiting the amount of lead allowed in foods and food ingredients, including the traditional foods of their countries. Selected foods and dietary supplements should be monitored to ensure that lead levels do not rise above normal background levels.

23. Food processors should choose food and food ingredients, including ingredients used for dietary supplements that have the lowest lead levels possible. They should also consider whether the land used to produce crops has been treated with lead-containing pesticides or sewage sludge.

24. During processing, maximum removal of surface lead from plants should be practiced, e.g., by thoroughly washing vegetables, particularly leafy vegetables; removing the outer leaves of leafy vegetables; and peeling root vegetables, where appropriate. (Home gardeners should also follow such steps if their soil has elevated lead levels.)

25. Food processors should ensure that the water supply for food processing complies with maximum limits for lead established by the national or local authorities.

26. Food processors should examine piping within facilities to ensure that older piping is not adding lead to water supplies inside the facility. Such piping may include brass fixtures, in addition to lead-soldered pipes.

27. Food processors should use food-grade metals for all metal surfaces that come into contact with food and beverages.

28. Food processors should not use lead solder to repair broken equipment in food processing facilities. They should also not substitute non-food-grade equipment that may be present in a food processing facility for broken food-grade equipment.

29. Food processors should ensure that lead paint peelings do not become a source of lead contamination in processing facilities. If food processors carry out lead paint abatement, they should also ensure that appropriate cleanup procedures are followed to prevent further dispersion of lead paint and dust, which could create a greater hazard.

30. Food processors should occasionally test incoming raw materials and finished products for lead to verify that their control measures are functioning effectively.

1.4 Production and Use of Packaging and Storage Products

31. To provide maximum protection against lead contamination, food processors should not use lead-soldered cans. Alternatives to lead-soldered cans are discussed in Food and Nutrition Paper 36 from the FAO, "Guidelines for can manufacturers and food canners. Prevention of metal contamination of canned foods," as well as JECFA Monograph 622. These alternatives include using two-piece cans (which lack side seams) rather than three-piece cans, using cementing and welding to bond seams instead of soldering, using lead-free (tin) solders, and using alternative containers, such as glass.

32. Where it is not feasible to avoid the use of lead-soldered cans, methods for reducing lead exposure from lead-soldered cans are discussed in depth in FAO Food and Nutrition Paper 36. Lead can be released from the solder surface itself, or from solder dust or solder splashes deposited inside the can during the can-making process. Methods for reducing splashing and dust formation include avoiding the use of excess flux, controlling exhaust over the work area to minimize dust deposition, controlling the temperature of the fluxed can body and solder, post-solder lacquering of the interior surface or interior side seams of cans, careful wiping of excess solder from finished cans, and washing soldered cans before use. For a detailed description of proper manufacturing practices with lead-soldered cans, the FAO paper should be consulted.

33. Tinplate used for food cans should meet international standards for maximum allowable lead concentration. ASTM International has set a maximum concentration of 0.010 percent lead for "Grade A" tinplate.

34. Lead dyes or lead-based printing inks should not be used for packaging, such as for brightly colored candy wrappers. Even if such wrapping does not come in direct contact with foods, children may be tempted to put the brightly colored wrappers in their mouths.

35. Plastic bags or boxes with exteriors treated with lead-based dyes or lead-based printing inks should not be used for packing food. Handling of these items during cooking or reuse by consumers for storing other food items can cause lead contamination.

36. Packing foods for sale in traditional lead-glazed ceramics should be avoided because these ceramics may leach significant quantities of lead into the foods.

37. Lead foil capsules should not be used on wine bottles because this practice may leave lead residues around the mouth of the bottle that can contaminate wine upon pouring.

38. National authorities should consider setting standards for lead migration from lead-glazed ceramic ware, lead crystal, and other lead-containing items that might potentially be used for food storage or preparation by consumers.

39. Decorative ceramic ware that has the potential to leach unacceptable quantities of lead should be clearly labeled as not for food use.

40. Ceramic ware producers should use manufacturing procedures and quality control mechanisms that minimize lead leaching.

1.5 Consumer Practices

41. Local and national authorities should consider educating consumers about appropriate practices to reduce lead contamination in the garden and the home.

42. Consumers should avoid storing foods, particularly acidic foods or foods for infants and children, in decorative ceramic ware, lead crystal, or other containers that can leach lead. Foods should not be stored in opened lead-soldered cans or stored in reused lead-dyed bags and containers. Consumers should avoid frequent use of ceramic mugs when drinking hot beverages such as coffee or tea, unless the mugs are known to have been made with a lead glaze that is properly fired or with a non-lead glaze.

43. Consumers should wash vegetables and fruit thoroughly to remove dust and soil that may contain lead. Washing hands before preparing food will also help remove any lead-contaminated dust or soil from hands.

44. Where lead in water distribution systems is a problem, consumers should let water run from faucets before use to allow corroded lead from piping to be flushed out of the system, particularly if they are preparing foods for infants or children. Hot water from the faucet should not be used for cooking or food preparation.

1.6 CONSIDERATION FOR CERTAIN FOODS

45. Calabash chalk, also known by other names such as Argila, La Croia, Calabarstone, Ebumba, Mabele, Nzu, and Ulo, is eaten by some women as a traditional food to help alleviate morning sickness during pregnancy. Levels of lead in this product are often high (greater than 10 mg/kg) and may have consequences for the health of the developing fetus. If the product cannot be produced without high levels of lead, the product should no longer be consumed.