breakout ABSTRACT

VISION to REALITY 2005

TITLE

Using Tailings as Agricultural Lime in St. Francois County, Missouri: A Final Look

THEME

Disseminate Credible Information to Guide Policy, Practice and Other Actions to Improve the Nation's Health

KEYWORDS

Lead, tailings, Missouri Department of Health and Senior Services, St. Francois County, Missouri, environmental public health tracking, agricultural lime, federal lead mine company, Elvins-Rivermines

BACKGROUND

Farmers in St. Francois County, Missouri, were using lead tailings from mining activities as agricultural lime. In August 2003, the Environmental Protection Agency (EPA) banned its further use until a public health assessment could be completed. At the request of the EPA, the Missouri Department of Health and Senior Services (DHSS) conducted the assessment.

OBJECTIVE(S)

1) Determine if children less than 72 months of age in the rural areas of St. Francois County had elevated blood lead levels of 10 µg/dl or greater. 2) Determine risks to residents of the county through continued use of tailings as lime. 3) Evaluate the effectiveness of the blood lead screening program in St. Francois County. 4) Test the effectiveness of linking health-related data to environmental data sources.

METHOD(S)

Centrus Geocoding software was used to geocode 2001-2003 STELLAR data. Cases were overlaid on land-cover profiles using ArcGIS software to determine a total of persons living on or near agricultural lands and compute screening rates. Additional layers for soil type, soil erodibility, and hydrography were used to create an environmental profile of the county.

RESULT(S)

Health risk was indeterminate. Several rural children with blood lead levels 10 µg/dl or greater were identified. Blood lead screenings were primarily focused in the urbanized areas of the county. The county is well drained and highly erodible.

DISCUSSION/RECOMMENDATION(S)

Based on this initial study, Department of Health and Senior Services staff determined that the use of tailings as agricultural lime should not resume until health risks were determined and appropriate controls were enacted to safeguard residents. They also identified a need to target blood lead screening efforts in the rural areas of the county.

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Since the completion of this study, several actions have been taken that impact public health policy. First, the EPA tested soil in several of the fields where tailings had been applied. The results of these tests showed that lead and cadmium levels were lower than expected. The EPA has cleared the use of tailings for agricultural lime, but only with procedures in place to track its actual use.

Next, the Missouri Department of Natural Resources has begun efforts to develop a long-term stewardship plan for properties where tailings have been applied. Under the proposed plan, future users and purchasers of the properties will be alerted that lead and cadmium levels could be elevated.

Finally, the St. Francois County Health Department obtained funding for the purchase of geographic information software. This software is currently being utilized to track screening efforts in the county. Use of the software to track other environmental hazards in conjunction with DHSS staff is planned.

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