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滇黔“燃煤污染型”氟中毒重症区粮食氟和砷污染的主要途径 [点此下载全文](#)

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摘要:

滇黔地区室内燃煤污染所致慢性氟中毒是我国特有的长期困扰我国的主要环境健康问题之一。为了探讨滇黔“燃煤污染型”氟中毒重症区粮食氟和砷含量及污染的主要途径和改灶降氟炉的使用状况及氟中毒防治效果等, 从2005年至2008年11月, 连续在云南省和贵州省氟中毒较严重的地区——昭通市的镇雄、威信、大关、彝良、昭阳区以及贵州威宁石门坎、毕节、赫章和非病区昭通巧家、鲁甸县等地, 调查了当地500余户改灶降氟炉的使用状况、生活习惯及粮食干燥和保存方式、儿童氟斑牙患病率等, 系统采集和分析测定了改灶降氟炉使用区和非使用区烘烤前后

关键词: [燃煤污染型氟中毒重症区](#) [玉米和辣椒氟和砷含量](#) [粮食氟和砷污染途径](#) [改灶降氟](#)

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Abstract:

For study the fluorine and arsenic content and pollution route of the grain in “coal burning” endemic fluorosis area in Yunnan—Guizhou area and the effect of improved oven for defluorination(OD) in preventing coal burning chronic fluorosis and the situation of OD use in fluorosis areas in Yunnan—Guizhou Provinces, the living habits, the way of drying and preservation for grain and the children's dental fluorosis rate about 500 families were investigated in the famous serious fluorosis areas [CD2] Zhenxiang, Weixin, Daguan, Yiliang County and Zhaoyang of Zhaotong City in Yunnan Province and Weining County and Bijie County in Guizhou Province, and non fluorosis areas [CD2] Qiaojia, Ludian County of Zhaotong City in Yunnan Province during Apr. 2005 to Dec. 2008. The fluorine content of grain before and after dried in both using and no using OD areas were analyzed. The results show: the fluorine and arsenic content in most fresh grain are lower or a little more over the state standard, the fluorine content in most fresh corn between 1-2 $\mu\text{g/g}$ and arsenic content is lower than 0.1 $\mu\text{g/g}$, general in 0.01 to 0.05 $\mu\text{g/g}$, both in the fluorosis area or no infect area. But after about 10 days dried by burning coal quickly, the fluorine and arsenic content in the dried corn have a great deal increase, fluorine pollution level of grain dried by burning coal quickly. In the area of using OD or not, the fluorine pollution level of grain dried by burning coal quickly and dental fluorosis rate of local people are near same, in both areas are very high, and both of fluorine pollution level of grain dried by burning coal are over state standard, and arsenic pollution level increase more than 10 times than the fresh corn; In the using or non using OD districts, dental fluorosis rate of children, who are mainly feed by dried corn by burning coal quickly, come to 100%, and their fluorosis rate are equivalent. The reason of that OD can't decrease the coal burning endemic fluorosis rate of southwest China is not the lower using rate or incorrect use of OD. The reason is its lower firepower which can't dry grain quickly in a short time. So, the main route of fluorine and arsenic pollution of grain in “coal burning” in southwest China endemic fluorosis area is the way of using the open oven burning coal to dry the grain. In the using or non using OD districts, people still use the open oven to dry the grain; no one uses the OD to dry the grain. So, it is not enough to improve oven only for defluorination in preventing “coal burning endemic fluorosis” in southwestern China, it can not cut off the source of fluorine when grain dried by burning coal, and need add the other way to together to cut off the source of fluorine.

Keywords: [Coal burning endemic fluorosis](#) [fluorine and arsenic content of corn and capsicum](#) [route of fluorine and arsenic pollution of grain](#) [Improved oven for defluorination](#)

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