

研究简报

集约化养殖禽畜粪中主要化学物质调查

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摘要 对广东省集约化养殖场61个禽畜粪样本进行调查的结果表明, 鸡粪和猪粪的总N、P、K含量均明显高于传统养殖, 鸡、猪和鸽粪的P/N比高于一般作物的P/N比; 3种禽畜粪总盐分含量分别为49.0、20.6和60.3 g·kg⁻¹, 盐分组成以K和Na的硫酸盐和氯化物为主; 鸡粪Cu、Zn和As的平均含量分别为107.5、366.6和21.6 mg·kg⁻¹; 猪粪分别为765.1、1128.0和89.3 mg·kg⁻¹; 鸽粪分别为56.1、210.9和2.9 mg·kg⁻¹. 这3种禽畜粪的Pb、Cd和Cr含量均很低, 在未检出至12.0 mg·kg⁻¹之间. 按不同肥料重金属限量标准, 鸡粪和猪粪重金属超标以Cu、Zn和As为主, 其中Zn的超标最为普遍.

关键词 [动物粪肥](#) [P/N比](#) [盐分](#) [重金属](#)

分类号

Major chemical components of poultry and livestock manures under intensive breeding

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Abstract

Owing to the wide use of feed additives in modern intensive poultry and livestock production, the major components and their concentrations of domestic animal manures may be greatly changed, as compared with those in traditional breeding. An investigation on the 61 samples of chicken, pig and pigeon manures from the intensive poultry and livestock farms of Guangdong Province showed that the concentrations of total N, P and K in chicken and pig manures were obviously higher than those of traditional breeding, and the P/N ratio of three test manures was greater than that of common crops. The concentrations of total soluble salts (TSS) of test manures averaged 49.0, 20.6 and 60.3 g·kg⁻¹, respectively, which were mainly composed of the sulfate and chloride of potassium and sodium. The mean concentrations of Cu, Zn and As reached 107.5, 366.6 and 21.6 mg·kg⁻¹ in chicken manure, 765.1, 1128.0 and 89.3 mg·kg⁻¹ in pig manure, and 56.1, 210.9 and 2.9 mg·kg⁻¹ in pigeon manure, respectively. These manures were low in Pb, Cd and Cr contents, from non-detectable to 12.0 mg·kg⁻¹. According to the limiting criteria of heavy metals in fertilizers, the Cu, Zn and As in the three manures were the major elements exceeding the limits, especially for Zn.

Key words [Animal manure](#) [P/N ratio](#) [Salinity](#) [Heavy metal](#)

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