

## **Investigation of Heavy Metals and Phosphorus Accumulation in Sugar Apple Orchard Soils as Receiving Long-term Animal Dung Compost**

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### **Summary**

Sugar apple production is the most important pomology business in Taitung, The farmers always use animal dung compost (chicken or pig deposit) as organic matters (more than 8t/ha/yr) for fruit production. Heavy metals as copper and zinc were commonly found in these kind of composts because of the food that the chickens and pigs were feed by industrial way by added some heavy metals for animal disease control.

Eight sugar apple orchards were selected (3 in Taimali county, 2 in Tungho county, 2 in Peinan county and 1 in Taitung city) which including different soil characteristics and the animal dung compost were longterm applied over 10 years. The soils of these orchards were analyzed under different depth (0-150cm) for understanding the heavy metals (copper and zinc) and phosphorus accumulation.

It shows that the accumulation of copper (15-45mg/kg) and zinc (35-110 mg/kg) now are still in acceptable situation. Though phosphorus accumulated very large scale withinsoil surface layer and decreased by gradation, while there were no obvious gradation accumulation of copper and zinc by depth.

**Key words:** Animal dung compost, Soil contamination, Heavy metal.

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