**Ultrasonic based orchard spraying machine**

**automatic on target spray system**

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Type of Presentation: POSTER

Normally, Orchard spraying machine keep spraying when working through apple trees in the orchard. This type of spraying wastes a huge number of pesticide and then pollute our environment.

In solving this problem, an ultrasonic based on target spray system is designed. We place 5 ultrasonic sensor array on each side of the machine. By real time capture the data from ultrasonic sensor, calculate it to determine whether an apple tree is near pesticide nozzle and switch the status of solenoid valve.

we convert continuous spraying to intermittent on target spraying.

Experimental results shows that, in our orchard,

which is nearly one meter distance between each apple tree and four meters long between two lines,

**Keywords:** Orchard spraying machine; On target spray system; Ultrasonic

**基于超声波的果园喷药机对靶喷药系统**

**摘要：** 为克服果园农作物非对靶喷药造成的农药浪费和环境污染,设计了一种基于超声波测距原理的对靶喷药系统，通过实时计算超声波探头阵列获得的数据，控制电磁阀开闭，将连续性施药转变为间歇性对靶施药。试验结果表明，所设计的系统在4米标准行距的的苹果园中可以对苹果树对象进行识别和自动对靶喷雾有效减少农药浪费,降低对环境的污染。