



## Development of a Chute Control System for Forage Harvester

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### Summary

An automatic chute control system for a forage harvester is described. We developed a chute control system for a forage harvester to blow and load grasses automatically into the forage wagon. The forage harvester was a small and flail type in the field test. We modified the flail harvester for automatic loading. To get accurate relative position of the forage wagon, a laser scanner was attached to the forage harvester. This sensor emits fan beam of laser and can get directions and distances to reflectors on the forage wagon. The computer calculates position of the forage wagon from this sensor. And it controls actuators for chute and deflector angles in order to load grasses into the forage wagon.

In the result, loading accuracy gets progressively worse with distance from the harvester to the wagon. We decided that possible distance from the harvester to the wagon in this system is less than 5 m. The control system has performed well in harvesting.

Key words: Forage harvester, Chute control, Relative position measurement, Laser scanner