Research on mechanical harvesting of prickly pear for cattle feed.

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In 1988 Texas A&I received a grant to develop a biomass combine to harvest woody brush for use as an industrial fuel source. Since then we have adapted a previously proven Texas Tech cutterhead to a hydrostatically powered John Deere forage harvester. This machine has proven quite capable of harvesting 4 to 6 inch diameter mesquite trees, shredding them, and blowing the shredded biomass to a trailer behind the harvester. We felt this machine might prove useful in harvesting prickly pear cactus for cattle feed. Unfortunately with the high speed of the cutterhead (about 10,000 ft/min), the prickly pear cactus is converted to a mush like product with the consistency of a "milk shake". Unfortunately this is not picked up as is the woody brush. While this process might be useful if is desirable to destroy the cactus, this will certainly not harvest the cactus.

As our research schedule permits, we intend to examine cutterheads for the harvester that might be useful for harvesting prickly pear. Bill Maltsberger has successfully chopped prickly pear with a PTO powered pull type forage chopper. When we tried to had feed prickly pear into our John Deere Model 25, 3 point hitch mounted ensilage chopper, it was converted to a mush like product that jammed the machine. Perhaps the feed rolls squeezed the cactus too much before it got to the cutterhead. Bill Maltsberger stated that he has taken several of the blades out of his chopper and this seemed to help.

Brown Bear Corp. of Lennox Iowa, makes a series of machines for shredding brush, and backfilling trenches with a 3 ft tall-7 ft long auger. We are currently negotiating with Brown Bear for use of their brush header for use in harvesting biomass. However we are intrigued with the possibility of windrowing prickly pear with the attachment used to back fill trenches.

We would appreciate being kept informed of trials to harvest pear mechanically and would appreciate the opportunity to work with someone to develop a prickly pear harvester.

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