

DEVELOPMENT OF A SEED COTTON RECLAIMER FOR ROLLER GINS**S. E. Hughs****USDA, ARS, Southwestern Cotton Ginning Research Laboratory
Mesilla Park, NM****Abstract**

During the roller ginning process there is always a small percentage of seed cotton that is not or partially ginned and passes through with the ginned cottonseed. The unginned cotton in the cottonseed stream is called carryover. The carryover is reclaimed from the cottonseed and returned to the seed-cotton stream being fed to the roller-gin stand to be ginned. With the advent of high-speed roller ginning of upland cotton, the amount of seed- cotton carryover has increased over previous levels. Thus, an improved seed cotton reclaimer for use with the higher roller ginning rates to handle the increased carryover is needed.

An impact cleaner is a standard piece of seed-cotton cleaning equipment used before the gin stand to remove fine trash. The impact cleaner was designed to handle and clean high flow rates of seed cotton. An impact cleaner was modified to better reclaim the unginned cotton carryover from the cottonseed at the higher flow rates resulting from high-speed roller ginning. High speed videos (500 frames per second) taken of the operation of the experimental reclaimer over a period of several weeks were used to make stop action observations of various parts of the reclaimer to guide design changes. Visual analysis of the videos resulted in changes in saw and grid bar spacing, machine angle and sheet metal baffle shapes. At the time of the presentation, the experimental reclaimer reclaimed all of the desirable seed cotton, but allowed a very small amount of ginned cottonseed (estimated at less than 1%) to remain with the seed cotton. Observation of the most recent high speed videos suggested that reducing the speed of several components may solve the cottonseed loss problem. Once the initial phase design/experimentation is complete, the reclaimer will be installed in the USDA, ARS, laboratory roller ginning line for more extensive testing.