

**PREDICTING NEPS IN GINNED FIBER USING
AFIS IMMATURE FIBER FRACTION VALUES
AND SEED WEIGHT DISTRIBUTIONS**

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Abstract

Tangled fiber masses (neps) contain immature fibers that can ultimately manifest themselves as white specks in dyed fabric. Each operation involved in processing fiber increases the number of neps. The prediction of nep potential prior to processing provides a valuable tool for future decisions. *Gossypium hirsutum* L. var Deltapine 50 bolls grown in Nueces Co., TX 1993-1995 were selected. Three or four first position bolls were selected from different flowering dates in the 1993 and 1994 crop and roller ginned. All seeds were weighed in the sampled and categorized by weight. Fiber was analyzed using the Advanced Fiber Information System (AFIS). As the immature fiber fraction (IFF) value increased, the number of neps increased. In early season bolls containing few long-fiber motes and low weight seeds, IFF values were higher than later season bolls with few long-fiber motes and low weight seeds. As the number of long-fiber motes and low weight seeds increased in the sample the number of neps increased. All bolls from individual plants from the 1995 crop were pooled into samples, or bolls from a specific plant location were pooled into samples and saw ginned. Second position bolls were the main contributors to high IFF values. Machine harvested seed cotton was collected from the trailer and also from the extractor-feeder prior to saw ginning. Seed cotton was selected according to weight, fiber from high weight seed cotton had a baseline IFF around 8 and as the proportion of low weight seed cotton and long-fiber motes in a sample increased, IFF values increased. Random samples collected at the extractor-feeder showed that the distribution of seed weights in the 60-100 mg category was important in determining IFF values.