



TECHNICAL NOTE

USDA

NATURAL RESOURCES CONSERVATION SERVICE

HAWAII

Agronomy Technical Note - No. 3

ESTIMATING CROP RESIDUE ON SUGARCANE LAND

This coversheet transmits a copy of technical note originally released by NRCS Hawaii in December 1976.

Although the technical note is dated, it is still useful as a guide for estimating the amounts of cane trash residue left on the ground by mechanical harvesters.

TECHNICAL NOTES

U. S. DEPARTMENT OF AGRICULTURE

HONOLULU, HAWAII

SOIL CONSERVATION SERVICE

AGRONOMY NO. 7

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ESTIMATING CROP RESIDUE ON SUGARCANE LAND

A properly managed layer of residue is very helpful in reducing soil loss on open sugarcane land. The residue performs the following functions:

- Dissipates the energy of raindrops.
- Prevents surface puddling by raindrops; therefore, improves infiltration.
- Reduces water and wind erosion.
- Conserves soil moisture.
- Prevents surface compaction or crusting.



Toft
Harvester

Cane harvested by mechanical harvesters--such as the Toft machine or similar types of equipment--will leave an adequate layer of residue on the ground surface to retard soil erosion.

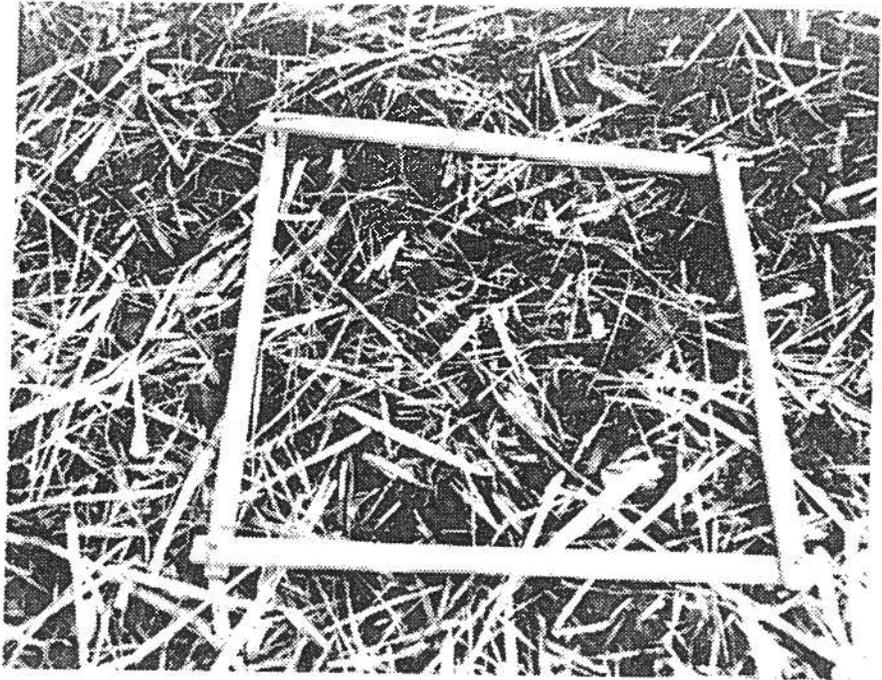
While the total amount or weight of the material left on the ground is important, the key factor is the uniformity of distribution. One reason for this is that the lilioko left on the field adds to the total weight, but has little protection value. The skill and experience of the machine operator is an important factor in obtaining proper amounts and distribution of residues.

Data collected by Max S. Coray, Soil Conservationist

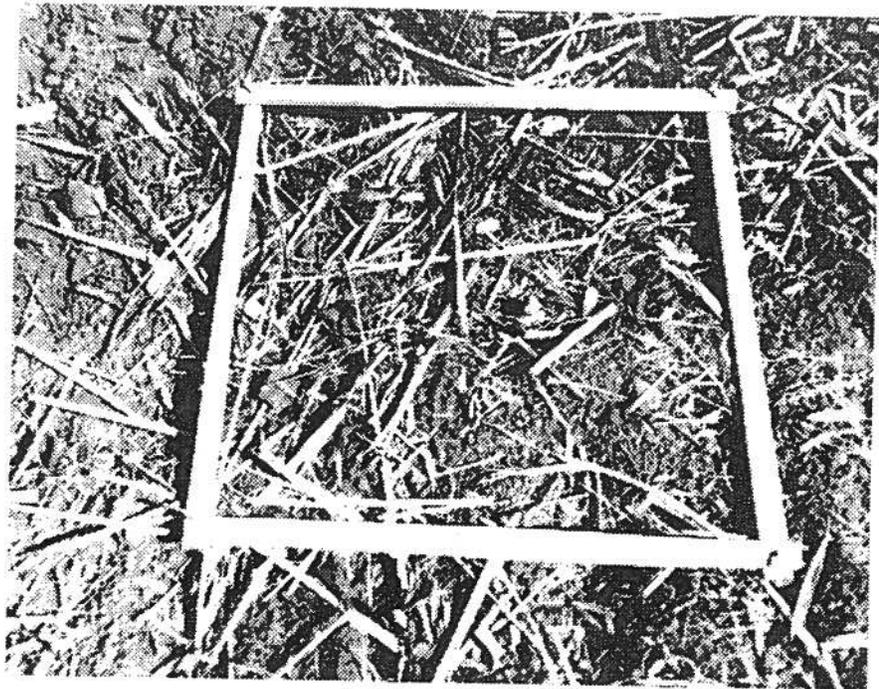
The following pictures are examples of cover for various amounts of cane trash left by the Toft harvester. They were taken under normal field conditions and provide a guide for estimating the amount of crop residue. Weights given are on an oven-dry basis. Examples of "good" and "poor" distribution by weight are given. Approximately 2,000 pounds of residue per acre that is uniformly distributed will contribute greatly to effective erosion control.

Cane residues left by this harvest method also contribute to faster ratoon regrowth because of the soil moisture conservation effect. Fewer replacement plants are needed in ratoon crops because this harvest method cuts the plant off cleanly above the ground and is less damaging to the plant's root system. This also contributes to more uniform cane regrowth.

Good distribution
(1,500 lbs./ac.)

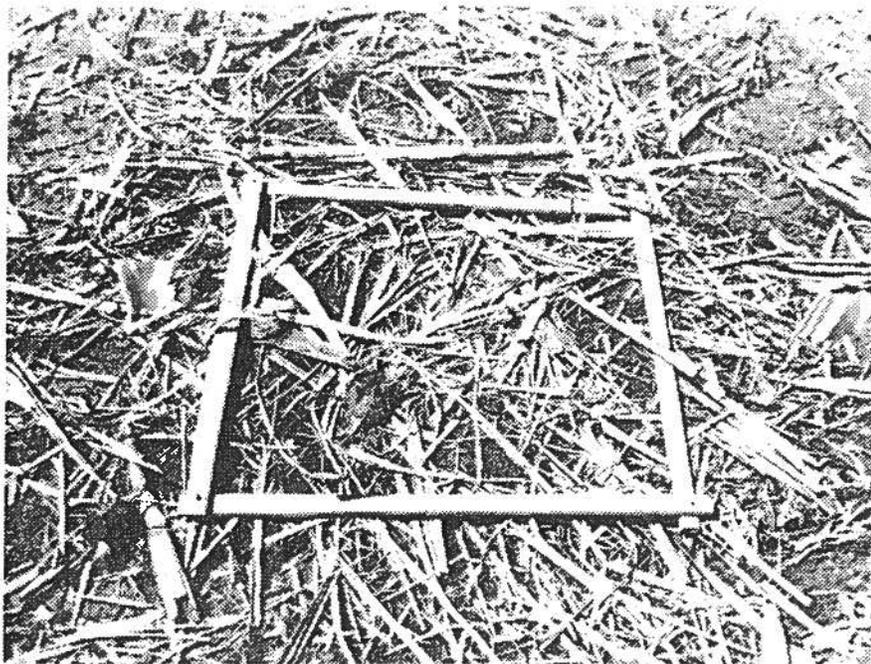


Poor distribution
(1,500 lbs./ac.)

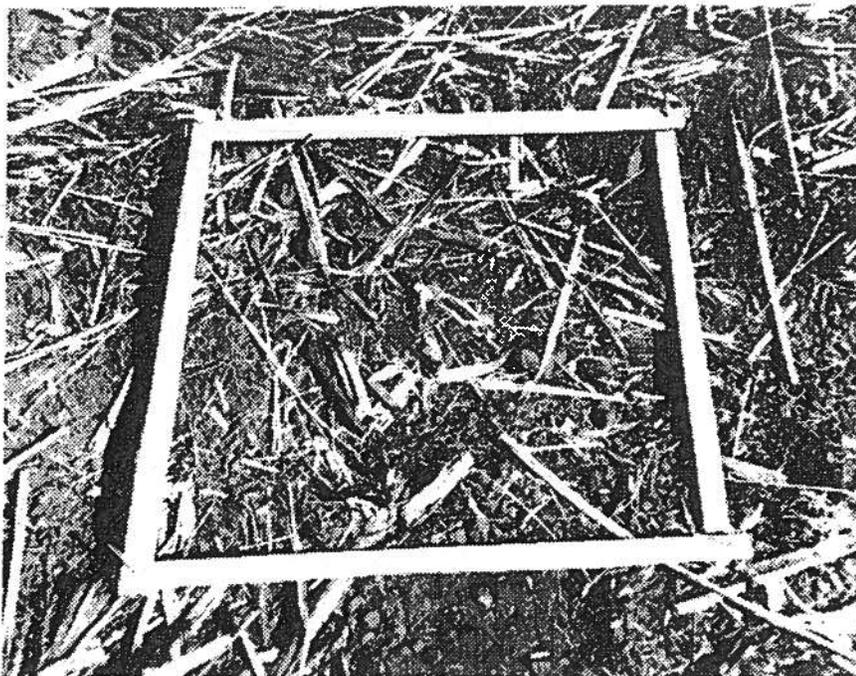


A guide for estimating amounts of
cane trash residue, oven-dry weight.

Good distribution
(2,000 lbs./ac.)

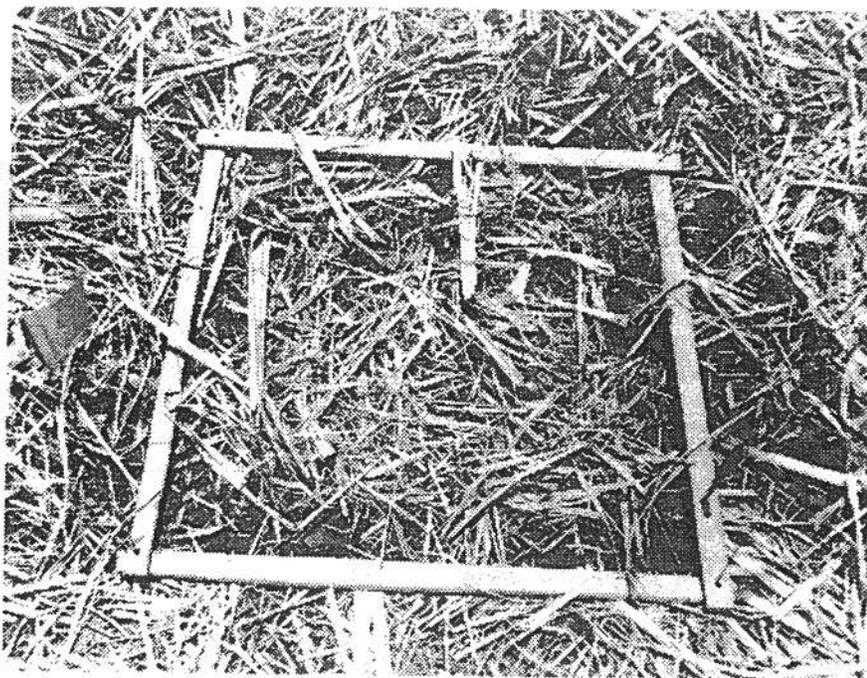


Poor distribution
(2,000 lbs./ac.)

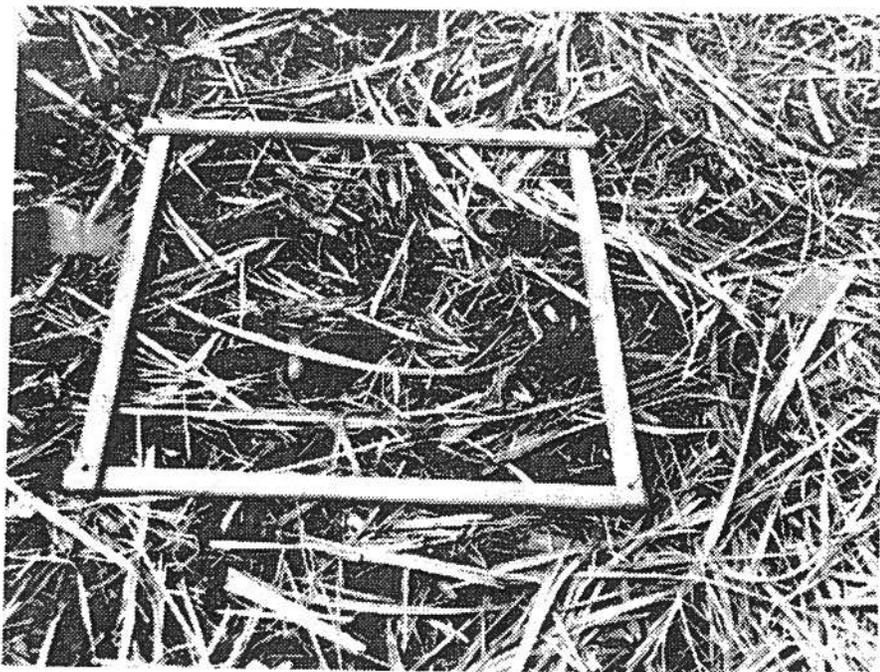


A guide for estimating amounts of
cane trash residue, oven-dry weight.

Good distribution
(2,500 lbs./ac.)

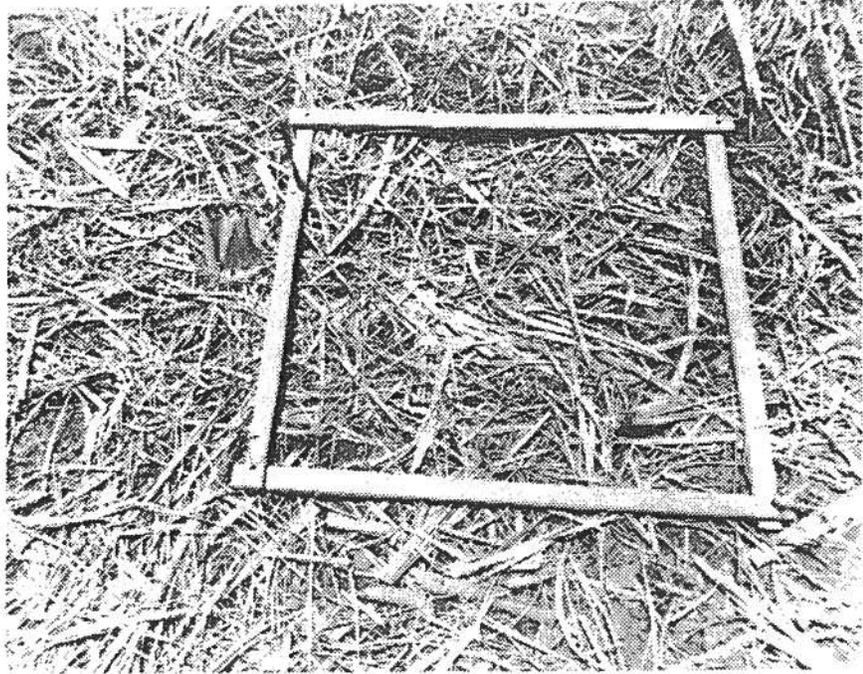


Poor distribution
(2,500 lbs./ac.)

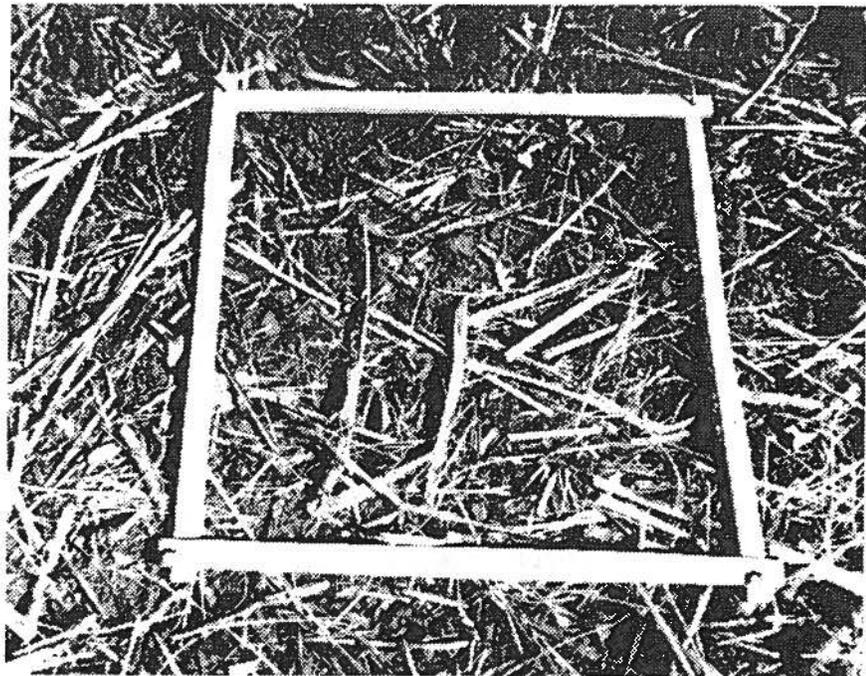


A guide for estimating amounts of
cane trash residue, oven-dry weight.

Good distribution
(3,000 lbs./ac.)



Poor distribution
(3,000 lbs./ac.)



A guide for estimating amounts of
cane trash residue, oven-dry weight.