

ESTIMATING ALFALFA SEED LOSS AT HARVEST:

Important numbers:

- 43,560 sq feet in an acre
- 225,000 seeds in a pound of alfalfa
- 500 seeds in a gram

Calculation and examples:

How many seeds per square foot is 1 pound per acre if spread evenly over that acre?

$$225,000 \text{ seeds/lb} / 43,560 \text{ sq ft in an acre} = 5 \text{ seeds per sq ft}$$

50 seeds per acre foot is 10 lbs per acre if evenly spread over that acre

How much loss is 1 seed per sq inch evenly spread?

$$1 \text{ seed per sq inch} = 144 \text{ seeds per sq foot}$$

If 5 seeds per sq ft = 1 lb/acre then,

$$144 \text{ seeds per sq ft} = 144/50 \times 10 = 29 \text{ lbs/acre}$$

What if I catch everything coming out the back of a moving combine in a box as the combine goes by, then screen and blow out the chaff, and weigh the actual seeds on an accurate scale?

Header Width = width of header (harvested width) in feet

Box Width = width of box in inches (Make sure you catch the full width of material)

Assume box width = distance travelled by combine over box

Weight = weight of seeds in box in grams

$$\text{Loss in Lbs/acre} = \frac{\text{Weight Caught in Grams} \times 1,150}{\text{Header Width (ft)} \times \text{Box Width (inches)}} = \text{Loss Lbs/Acre}$$

Example: Combine cutting full 35' header travels over box 24" wide that catches all the material coming out of the combine. After lots of screening and winnowing the seed left in the box weighs 23 grams. How much is lost in pounds/acre?

$$\frac{23 \text{ grams} \times 1,150}{35' \text{ header} \times 24'' \text{ box width}} = 31 \text{ pounds per acre}$$

Finally – If you can keep your combine loss at under 3% of the crop, you doing pretty good.