

Mathematical – statistical parameters for the observation of the harvested quantity:

- The assumption of the observed average quantity harvested, which is only a sample observation of the total harvested quantity is that the average value received in the random sample is a good approximation to the value of the complete harvested production;
 - $\bar{x} = \bar{X}$ means that with higher number of observed parcels the value of \bar{x} is going asymptotically to \bar{X} , and in the case of the total observation of the harvested production on all parcels in Austria we receive \bar{X} , our target is to maximise the number of the observed objects, we want to reach \bar{X} (what is not possible).
- The other highest significant mathematical – statistical value is the standard deviation s . Our target is that the standard deviation s of the observed average value of the harvested production in the random sample will be approximately σ ($s = \sigma$). In the case that the standard deviation s would be σ , the observed average value of the harvested production in the random sample \bar{x} would be identical with the average of the total harvested production \bar{X} .
- $\bar{x} = \bar{X}$ and at the same time $s = \sigma$, this would be exactly only in the case as we described above, which would be the observation of the total harvested production (what is not possible), the variable to be influenced is n = the selected number of the cases in the random sample survey, (N = all parcels in Austria). Both parameters together = the value $\bar{x} = \bar{X}$, and $s = \sigma$ is only possible in the case if we observe all the parcels harvested.
- In all observed cases in which the number of parcels is less than the total number of the parcels, \bar{x} can be only calculated with the exact declaration of a range and this range is dependent of the number of the observed parcels and the predetermined confidence interval.
- We have to find a compromise between exactness and the possible input belonging to human capacity, budget and other resources and constraints for the performance of a random survey belonging to the average harvested quantity.
- The compromise will be that we observe so many parcels as possible to secure the objectivity criteria. The parameters, which we have to include in our consideration will be:
 - The number = n of the parcels in the sample survey (influenceable),
 - The standard deviation in the sample survey (dependent from n),
 - The predefined confidence interval (95 %, 99 %)