


**Russian Federation**

**Kuban State Testing Station of Agricultural Machineries**

**Practical seminar  
on agro-technical evaluation  
of combine harvesters**



Agrotechnical evaluation of the combine is carried out to determine the quality of work and costs associated with harvesting



# Conditions of the field experiment

The background of the slide is a photograph of a combine harvester working in a field of golden wheat. The harvester is positioned in the upper middle part of the frame, and the wheat stalks are in sharp focus in the foreground, creating a sense of depth. The sky is a clear, pale blue.

The field experiment is conducted on the predominant grain crop in the area (winter wheat) by the predominant method of harvesting (direct harvesting)

Determination of quality indicators based on the results of adjustment and control shift is carried out on the same field

Characteristics of grain yield, weed infestation, moisture of grain and straw, stoddiness are determined

The field for the experiments must meet the requirements of regulatory documentation and "divided" into plots

# Initial requirements for the combine

Adjusted to the mode of maximum productivity, observing the following conditions:

- Grain losses behind the threshing machine – not more than -1.5%
- Losses of grain behind the harvester – not more than 0.5%
- Grain breakage - not more than 2,0%
- Grain impurity content in the grain mass of the hopper – not more than 2,0%

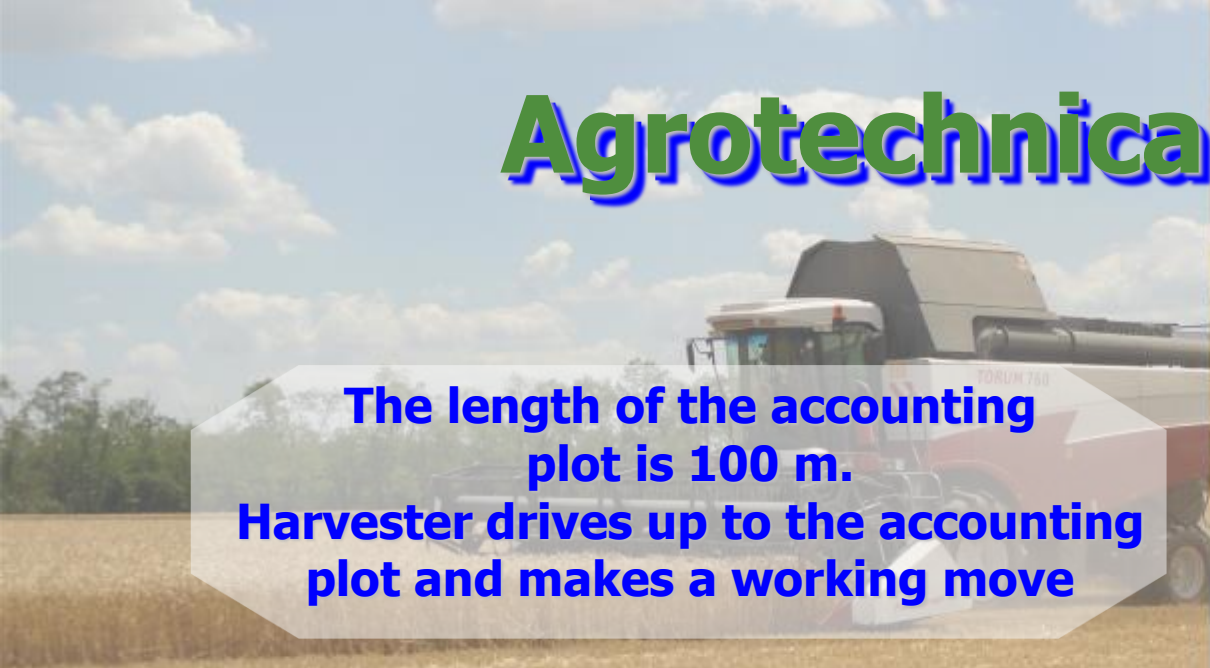


Harvester must be set to cutting height 10 cm, but actual height must not exceed 15 cm

The chopper-spreader should be switched off or dismantled for the duration of the experiment



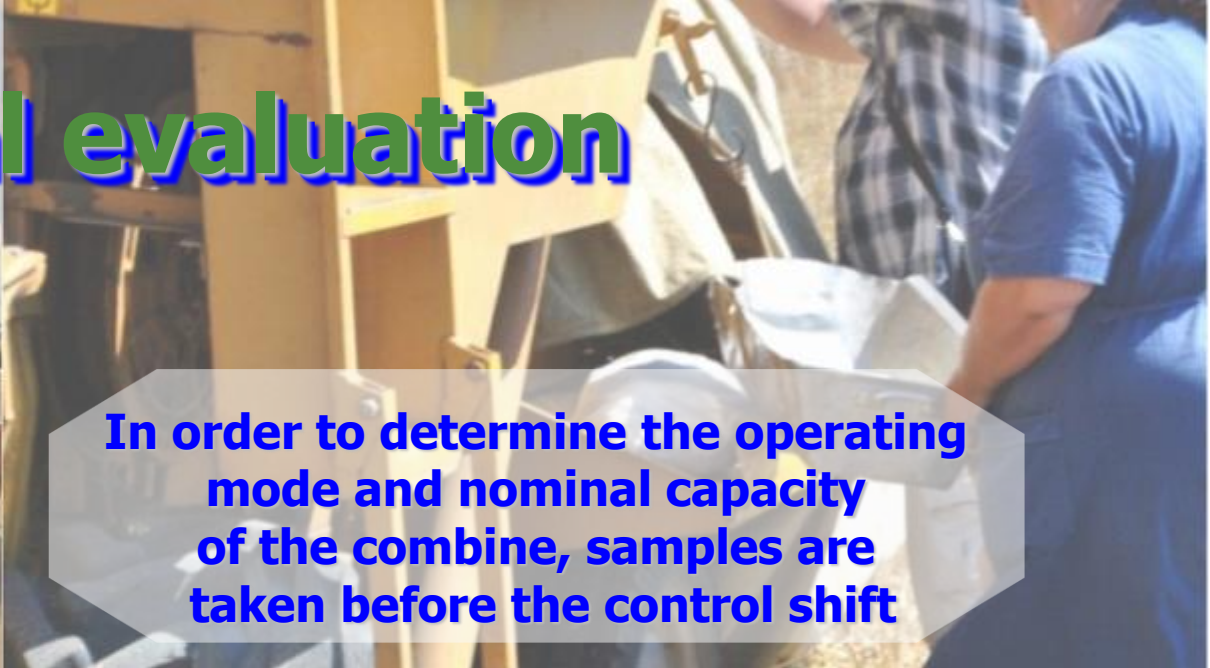
# Agrotechnical evaluation




The length of the accounting plot is 100 m.  
Harvester drives up to the accounting plot and makes a working move



At steady-state operation of the harvester, samples are taken in at least three replications in each loading mode



In order to determine the operating mode and nominal capacity of the combine, samples are taken before the control shift



Combine is equipped with a sampler



# Determination of nominal capacity



In the experiment determine:

- combine speed
- cutterbar working width
- cutting height
- mass of grain harvested during the experiment
- grain loss behind the thresher
- grain loss behind the header
- grain breakage
- content of trash in the grain mass of the hopper



# Control shift

Conducted on a specific area of the field (the area is determined by the duration of the control shift of at least 8 hours) with approximately uniform yield on the selected adjustment of the LSU and cutterbar, at a speed mode corresponding to the obtained nominal productivity

During the inspection shift, the combine's operation mode is monitored by the following indicators:

- speed of the combine;
- cutting height;
- MSU adjustments

To determine the productivity, fuel consumption and coefficients that characterize all elements of the shift time, conduct a continuous chronography of the combine

**During the control shift quality indicators of the technological process are determined:**

**Total losses behind the combine**

**Grain crushing**

**Content of trash**

**Cutting height**





**Thank you  
for your attention!**