Study on some silkworm, Bombyx mori L breeds susceptibility to artificial diet feeding

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PURPOSE AND TASKS

In order to determine the susceptibility of breeds (Bombyx mori L.) from the genetic bank of Bulgaria to artificial diets have set the following tasks:

- insurance and preparation of biological material and forming groups of breeds and lines;
- incubation and breeding populations of the target species with artificial food;
- determine the vitality in instars development;
- identify the most promising species for breeding with artificial food and selection;

MATERIAL AND METHODS

250 g
dry substance

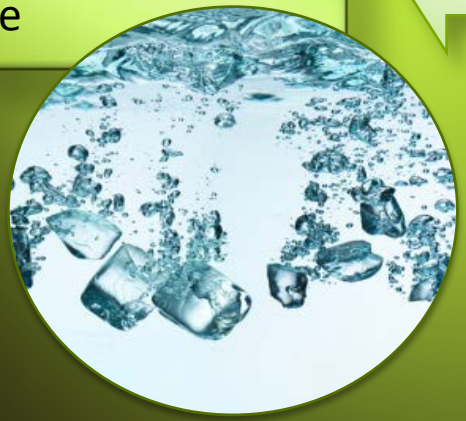
675 ml
of distilled water

Homoge-
nizing mixer

Filling with a layer
thickness
of ~ 2cm

Heat treatment
in MW for 10`
at ~800W

Shock cooling
with water and
ice



MATERIAL AND METHODS

Table 2. Criteria for assessing the degree of receptivity of silkworms to artificial

Degree of receptivity	Vitality (%)
Very high	Over 90
High	85 - 90
Normal	70 - 85
Low	60 - 70
Very low	Under 60

RESULTS AND DISCUSSION

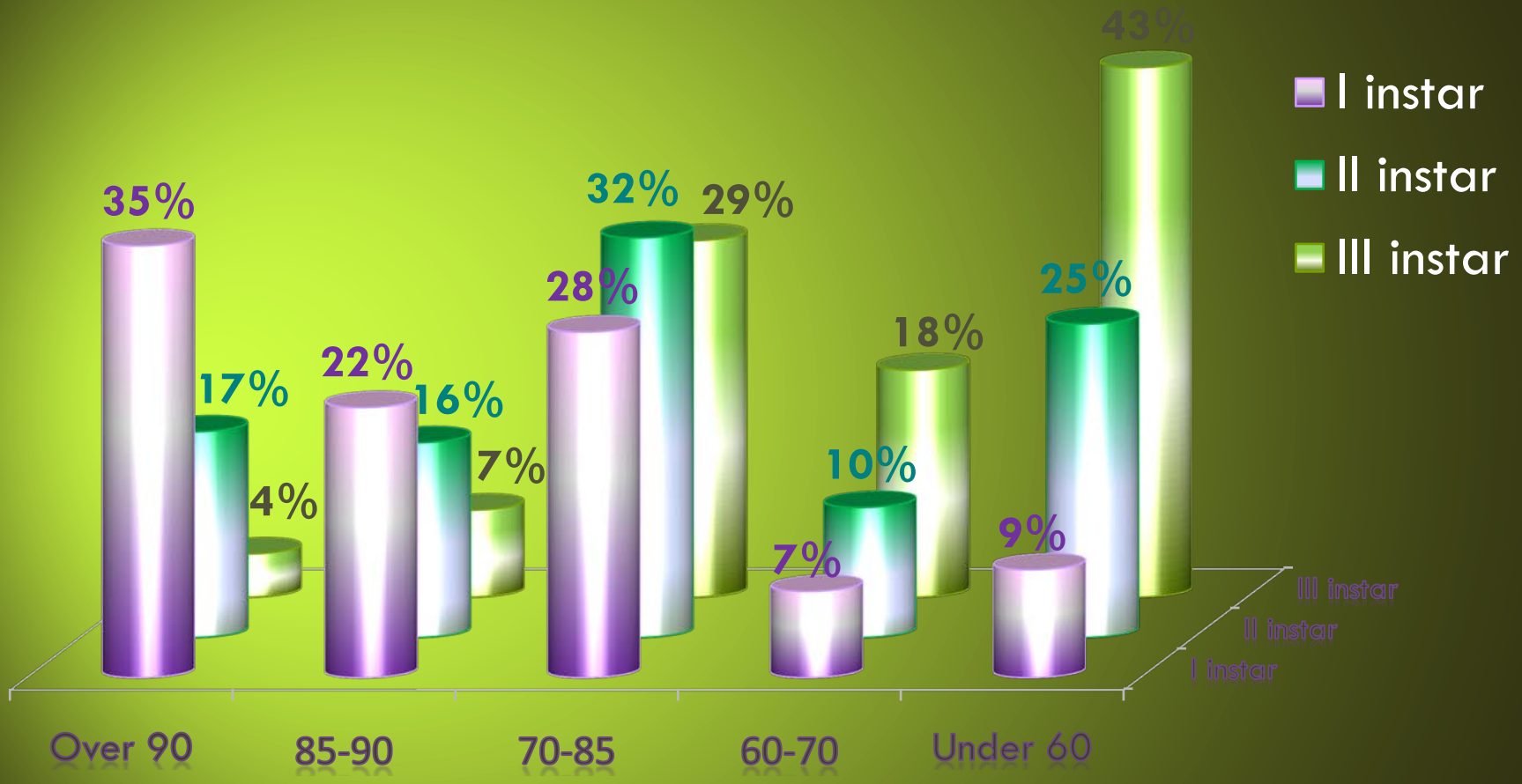


Figure 1. Distribution of breeds depending on the degree of susceptibility to artificial food.

RESULTS AND DISCUSSION

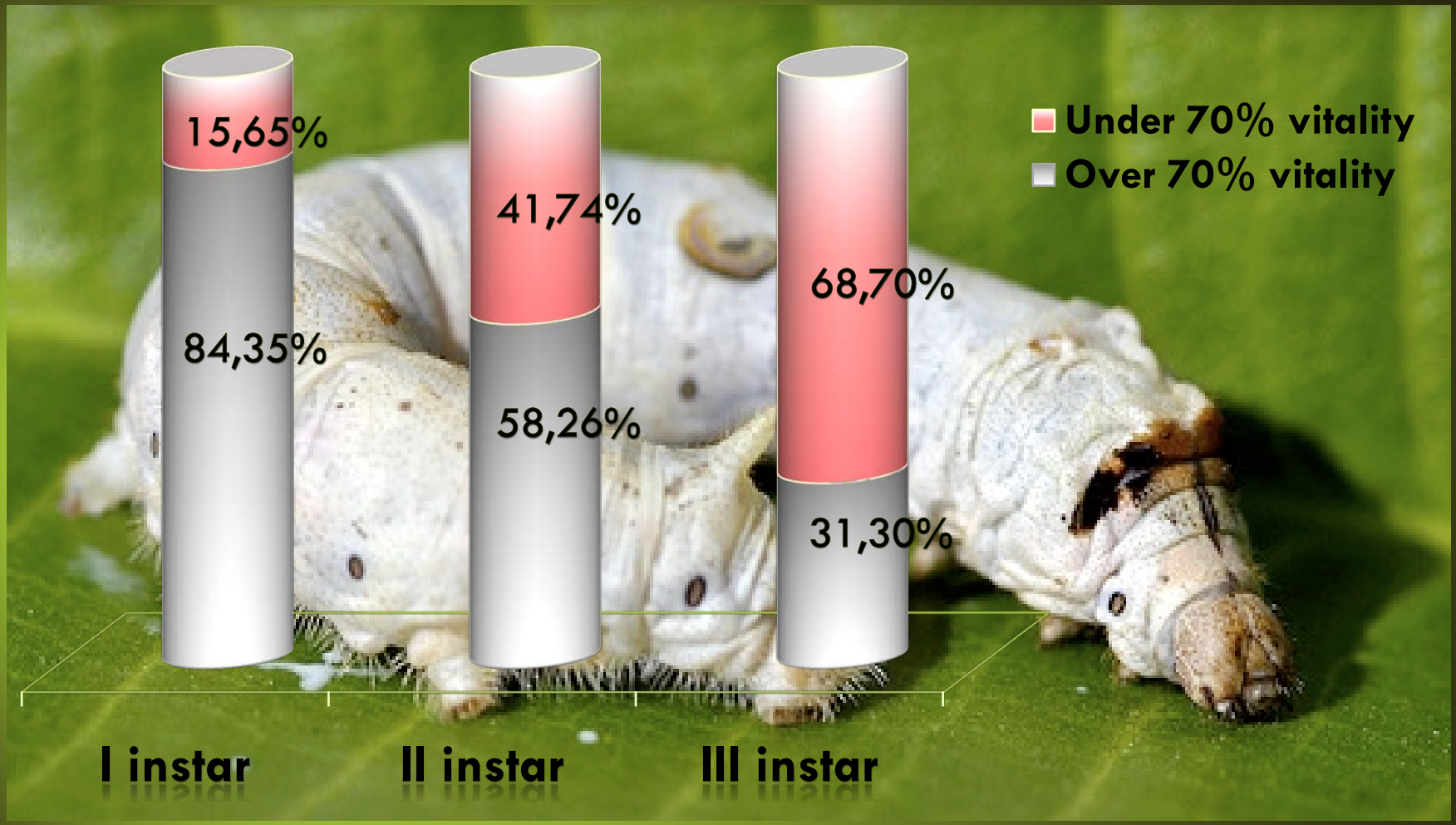


Figure 2. Percentage ratio between breeds with high (over 70%) and low (under 70%) susceptibility to artificial diet.

RESULTS AND DISCUSSION

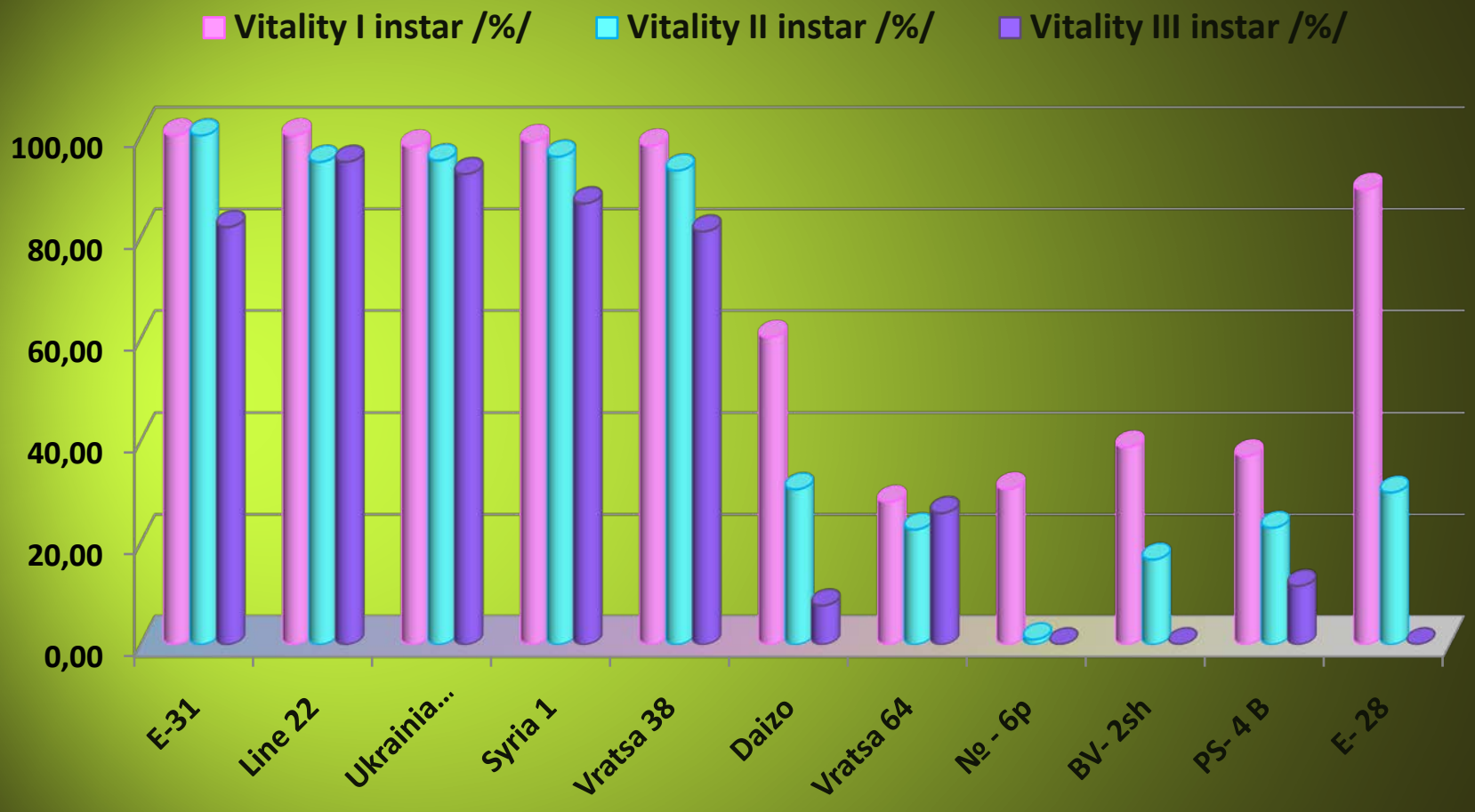


Figure 3. Breeds with the lowest and highest dynamics of vitality during age development.

RESULTS AND DISCUSSION

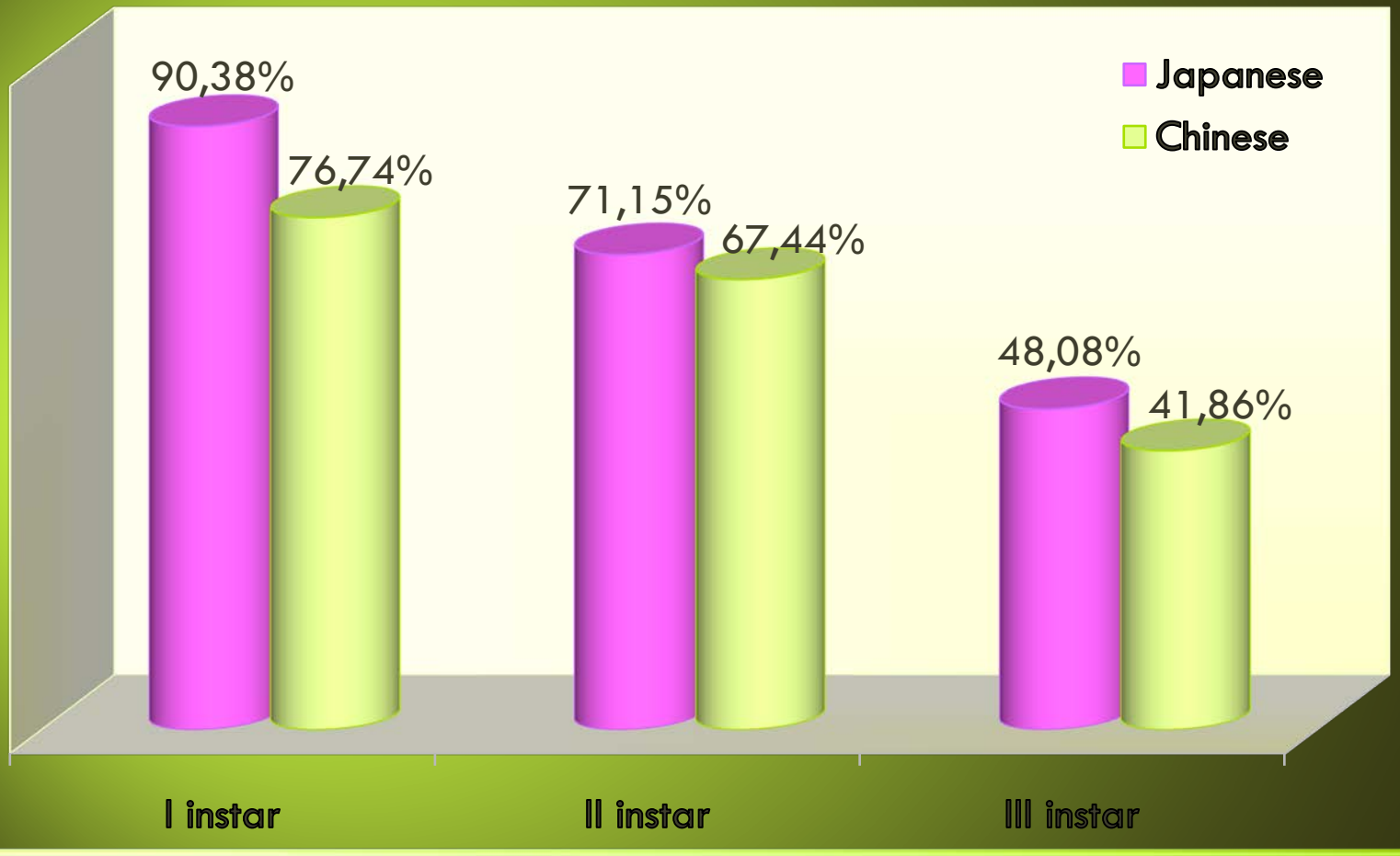


Figure 4. Percentage ratio between breeds of Japanese and Chinese type, exhibiting high vitality (over 70%).

Conclusion

- Feeding specimens of all breeds studied with artificial food by 25% content of mulberry leaf powder has a multifaceted effects on the survival rate during the observed instars of larval development and varies in wide ranges (from 27.96% to 100% in the first instar; from 0.95% to 100% in the second and from 0% to 94.80% in the third instar.
- Breeds "E-31", "Line 22", "Ukrainian 20", "Syria 1", "Vratsa 38" show the lowest dynamics of the indicator vitality and retain high degree of receptivity in all three instars of their age development, and therefore can be identified as the most promising of all 115 breeds studied.
- In the first instar the majority of breeds (84.35%) are characterized by a survival rate above 70%. Given that the results obtained from the original forms in which no selection in receptivity to artificial diets has been made, it can be considered that in conducting targeted interbreed individual selection the vitality of breeds can be improved
- In general, the breeds belonging to the Japanese breed group demonstrate higher affinity to artificial food compared to those of Chinese origin.

Thank you for the attention!