ADAPTATION OF THE INTENSIVELY CULTURED PIKEPERCH (*SANDER LUCIOPERCA*) JUVENILES TO POND CULTURE DURING WINTER AND THEIR FOLLOWING RE-ADAPTATION AND CULTURE UNDER RAS

Blecha, Kristan, Policar 2014
Introduction

Pikeperch

- freshwater fish
- typical carnivore fish,
- delicate meat,
- popular fish in RAS system

The aim of our study was:
to assess the capability of intensively cultured pikeperch juveniles’ adaption to pond conditions, to observe survival rate after 178 days pond culture, and to re-adapt these fish to the recirculation aquaculture system.
Fish groups and characteristics of pond culture

1500 pond reared juveniles (control group) (TL = 122.4 ± 6.6mm; W = 21.1 ± 2.8g)
1500 intensively reared juveniles (IRJ group) (TL= 133.3 ± 7.2mm; W= 23.8 ± 3.2g)

• marking of the fish - ventral fin cutting

• dividing of the fish into 3 ponds (400 m², 2.5 ± 1.6°C) - 500 individuals from each group

• adding of the prey fish *Pseudorasbora parva* (TL = 36.6 ± 9.6 mm)

• harvesting of the ponds after 178 days
Following re-adaptation to RAS conditions

- re-adaptation IRJ fish
- 6 tanks
- 70 fish in each tank
- 180 L tanks
- WT - 22.8±1.4°C
- oxygen - 7.3±0.6 mg O₂ l⁻¹
- 46 days
- 12L:12D
Feeding schedule during the re-adaptation

24 hours - no feeding

48 hours - 1:1 mixture of frozen bloodworm larvae (*Chironomus* sp.) and artificial pellet feed (BioMar, INICIO plus 2 mm)

43 days - continual 12 hours per day feeding
- feeding rate 1% of fish biomass
Assessed parameters after the pond rearing

- survival
- specific growth rate (SGR)

Assessed parameters at the end of RAS rearing

- adaptability to RAS and artificial pellet-feed
- survival
- specific growth rate (SGR)
- feed conversion rate (FCR)
Pond rearing

<table>
<thead>
<tr>
<th></th>
<th>group IRJ</th>
<th>group C</th>
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</thead>
<tbody>
<tr>
<td>SGR (%.d⁻¹)</td>
<td>0.063±0.012a</td>
<td>0.041±0.027a</td>
</tr>
<tr>
<td>survival (%)</td>
<td>65.2±15.9a</td>
<td>47.3±1.6b</td>
</tr>
</tbody>
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Re-adaptation to RAS

<table>
<thead>
<tr>
<th>Initial W (g)</th>
<th>Initial TL (mm)</th>
<th>Final W (g)</th>
<th>Final TL (mm)</th>
<th>Survival (%)</th>
<th>SGR (%.d⁻¹)</th>
<th>FCR</th>
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</thead>
<tbody>
<tr>
<td>31.65±8.11</td>
<td>166.69±13.26</td>
<td>43.36±11.12</td>
<td>204.12±9.27</td>
<td>98.4±0.9</td>
<td>0.73±0.44</td>
<td>2.16</td>
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According to our results, intensively cultured fish are able to adapt to pond condition, show satisfactory survival and again re-adapt on RAS condition and pellet-feed.
Why is it important to combine pond and RAS

- dividing of the production into two batches
- no more place in RAS
- fish for open waters
Are there any ponds for this rearing method?
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Thank very much to my colleagues which helped me with this experiment.

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