

## EFFECT OF CELL-RATE™ ON STRESS PARAMETERS IN FATTENING PIGS

In order to evaluate the mechanism by which CELL-RATE™ improves the meat quality the effect on different stress parameters has been checked.

2 equal groups of Norwegian Landrace pigs with a weight between 90 to 95kg were formed with 10 pigs each. Both groups were kept and fed identically. The pigs of the trial group received in addition 2g CELL-RATE™ per animal and day during the last 30 days.

As stress effect the transport to the slaughterhouse and the complete slaughter set-up was chosen.

Two blood tests were performed, the first one 2 days before slaughter and the second one during slaughter.

### Results:

	<b>Trial group</b>	<b>Control group</b>
<b>Start weight (kg)</b>	<b>94.0</b>	<b>90.6</b>
<b>End weight (kg)</b>	<b>104.3</b>	<b>100.4</b>
<b>Average weight gain (kg)</b>	<b>10.3</b>	<b>9.8</b>

### Blood parameters:

		<b>Trial group</b>	<b>Control group</b>
<b>Glucose (mmol/L)</b>	<b>1. sample</b>	<b>5.72</b>	<b>5.68</b>
	<b>2. sample</b>	<b>9.69</b>	<b>8.9</b>
<b>CK (U/L)</b>	<b>1. sample</b>	<b>206</b>	<b>225</b>
	<b>2. sample</b>	<b>458</b>	<b>980*</b>
<b>LDH (U/L)</b>	<b>1. sample</b>	<b>641</b>	<b>766</b>
	<b>2. sample</b>	<b>468</b>	<b>&gt;1600*</b>
<b>AST (U/L)</b>	<b>1. sample</b>	<b>20</b>	<b>23</b>
	<b>2. sample</b>	<b>17</b>	<b>67*</b>
<b>Cortisol (umol/l)</b>	<b>1. sample</b>	<b>0.10</b>	<b>0.11</b>
	<b>2. sample</b>	<b>0.27</b>	<b>0.23</b>

### Meat quality:

	CELL-RATE™ Group (n=20)	Control Group (n=20)
pH Musculus Semibranceous	5.97	5.62*
pH Musculus longissimus dorsi	5.86	5.64
PSA Characteristic	30%	75%

(Remark: the \* shows values with significant differences)

- 1) The subjective impression of the trial manager was that the test animals fed on CELL-RATE™ were much quieter than the controls.
- 2) The concentration of the stress enzymes (AST, LDH und CK) in the blood of the control animals were significantly increased to the animals of the trial group with CELL-RATE™. The increased values in the controls can indicate severe heart and muscle degeneration as the stress enzymes are released mainly when muscle cells are damaged.
- 3) The glucose and cortisol values show no significant differences between the two groups.
- 4) The pH-values were significantly lower in the controls and of the measured samples. 75% of Control did show PSE-characteristics. In the trial animals only 30% showed PSE-characteristics.