Table S1. Decoded values of independent variables and their levels used in the experimental design

Variables	Range of level				
	–α	–1	0	+1	+α
X_1: Stabiliser concentration, %	0.0293	0.05	0.10	0.15	0.1717
X_2: Swelling time for stabiliser, min	14.65	25	50	75	85.35

Table S2. Central composite design with the independent variables and their experimental responses

	Levels		**Factors**		**Response variables**	
Experiment no	X_1 (Coded level)	X_2 (Coded level)	Stabiliser concentration, %	Swelling time, min	Consistency index values, Pa.s	Total sensory scores
1	–1	–1	0.05	25	0.017±0.007	16.33±0.82
2	+1	–1	0.15	25	0.327±0.061	17.03±1.27
3	–1	+1	0.05	75	0.033±0.014	16.67±0.96
4	+1	+1	0.15	75	0.366±0.048	16.87±1.65
5	–1.414	0	0.0293	50	0.016±0.009	15.80±1.61
6	+1.414	0	0.1707	50	0.675±0.050	14.60±1.18
7	0	–1.414	0.10	14.65	0.034±0.006	16.73±0.98
8	0	+1.414	0.10	85.35	0.041±0.003	17.00±1.18
9	0	0	0.10	50	0.042±0.003	17.43±0.54
10	0	0	0.10	50	0.041±0.007	17.53±0.66
11	0	0	0.10	50	0.028±0.013	17.60±0.99
12	0	0	0.10	50	0.030±0.007	17.73±0.68
13	0	0	0.10	50	0.025±0.001	18.07±0.47

Table S3. ANOVA for the fitted second-order polynomial model and lack of fit for consistency index as per CCD

Source	DF	Sum of square	Mean square	F value	*P* value	Significance
Regression	5	1.431	0.286	53.41	0.000	**Significant**
Linear	2	0.924	0.462	86.23	0.000	**Significant**
X_1	1	0.922	0.922	172.10	0.000	**Significant**
X_2	1	0.002	0.002	0.36	0.553	Not significant
Square	2	0.506	0.253	47.23	0.000	**Significant**
$X_1 \times X_1$	1	0.498	0.498	92.91	0.000	**Significant**
$X_2 \times X_2$	1	0.000	0.000	0.00	0.985	Not significant
Interaction	1	0.00063	0.000632		0.733	Not significant
$X_1 \times X_2$	1	0.00063	0.000632	0.12	0.733	Not significant
Residual Error	33	0.17683	0.005359			
Lack-of-Fit	3	0.03369	0.011232	2.35	0.092	Not significant
Pure Error	30	0.14314	0.004771			
Total	38	1.60780				

Table S4. ANOVA for the fitted second-order polynomial model and lack of fit for total sensory scores as per CCD

Source	DF	Sum of square	Mean square	F value	*P* value	Significance
Regression	5	24.3303	4.8661	3.21	0.018	**Significant**
Linear	2	0.3491	0.1746	0.11	0.892	Not significant
X_1	1	0.2382	0.2382	0.16	0.695	Not significant
X_2	1	0.1109	0.1109	0.07	0.789	Not significant
Square	2	23.7936	11.8968	7.84	0.002	**Significant**
$X_1 \times X_1$	1	22.6856	23.6153	15.56	0.000	**Significant**
$X_2 \times X_2$	1	1.1080	1.1080	0.73	0.399	Not significant
Interaction	1	0.1875	0.1875	0.12	0.727	Not significant
$X_1 \times X_2$	1	0.1875	0.1875	0.12	0.727	Not significant
Residual Error	33	50.0990	1.5182			
Lack-of-Fit	3	5.4163	1.8054	1.21	0.322	Not significant
Pure Error	30	44.6827	1.4894			
Total	38	74.4292				

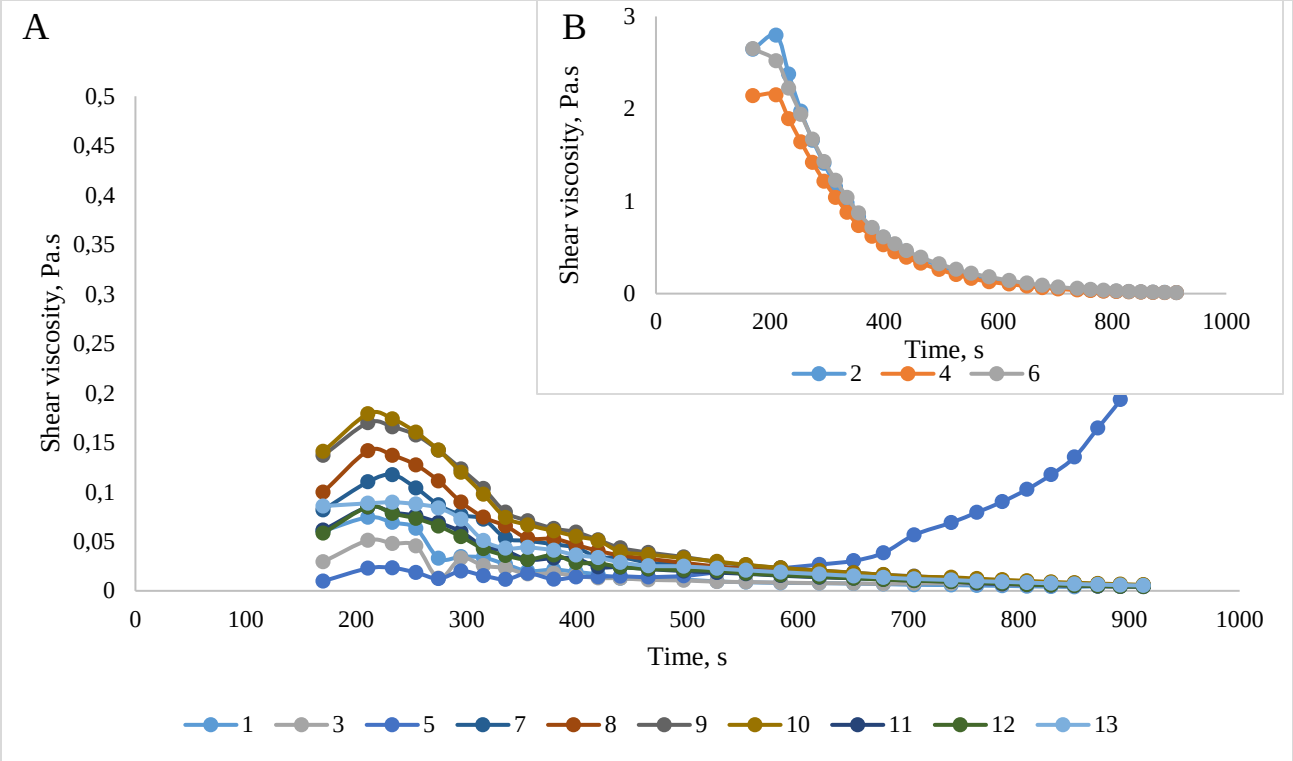

Fig. S1. Time-dependent shear viscosities of oat milk samples