

INTERNAL COMMUNICATION

DATE:	01/08/2019
CUSTOMER:	Dai A Industry JSC
CODE:	Exp 06-02-2019
SUBJECT:	Agricultural films

1. AIM OF THE WORK

Annexed to the TSR we received 4 samples of agricultural films:

- Sample 1 (Greenhouse): 0.48% HA88 + 0.06% Alvinox FB
- Sample 2 (Mulch): 0.48% HA88 + 0.06% Alvinox FB

The goal of the work is the QUV exposure, with evaluation of mechanical properties.

2. EXPERIMENTAL DATA/PART

QUV-A Exposure

Specimens were exposed in QUV-A (Fig. 1), supported by aluminum backing.

Cycle: 8 hours UV $0,89 \text{ W/m}^2$ -340nm at $T=60^\circ\text{C}$ - 4 hours No UV at $T=50^\circ\text{C}$.



Figure 1: QUV

In order to check the retention of mechanical properties, at least 5 samples for each formulation are pulled out periodically; check of tensile properties (Tensile Strength and Elongation at Break) was carried out by an Instron Mod. 5566 Tensor check (Fig.2)



Fig. 2: Tensor check Instron Mod. 5566

Results

In Table 1 and 2 the retention of tensile strength at break and the retention of elongation % at break are reported:

Retention % of Tensile strength at break [N]				
	0	100	255	644
Sample 1	100,00	88,14	109,81	101,44
Sample 2	100,00	87,79	110,89	52,40

Table 1

Retention % of Elongation % at break				
	0	100	255	644
Sample 1	100	84,88	95,84	100,41
Sample 2	100	93,53	100,32	103,96

Table 2

3. Conclusions

After 644 hours of exposure, if we consider the tensile strength at break, sample 1 is good. If we consider the elongation at break, all the samples show the same elasticity than the beginning of the test.