

Міністерство освіти і науки України
Хмельницький Національний Університет

V Українсько-Польські
наукові Діалоги
Міжнародна наукова конференція



16-19 жовтня 2013 р
Хмельницький- Яремче

**NEKOZ O.¹,
YASTREBA S.²**

¹National University of Food Technology, Ukraine

²Poltava College of Food Technoogy, Ukraine

WEAR PATTERN OF OIL PRESSES

The wear of the parts of the presses causes deterioration of the operation of the press, which is manifested through reduced productivity, increased energy costs, reduction of oil yield, growth of oiliness of the press cake and so on.

However, the known data on the pattern and mechanism of the wear of the parts of the presses at the contact interaction with these environments are rather contradictory.

Performance observations testify that the wear of the parts along the length of the screw varies and increases when approaching the discharge assembly. The wear measurements we took of the edges of the flights of the screw of the IIM-450 press after processing 3,000 tons of sunflower seeds showed that the wear of the flights sharply intensifies starting with the fifth flight.

Similar wear patterns (increasing of intensity towards the press cake outlet from the screw) have been established for other parts of the press screw (bars and knives of the press, intermediate rings).

As shown by our studies, operational roughness of the parts of the press screw depends on the location of the parts along the length of the press. If the surface roughness of the flights of the screw, press bars, knives, intermediate sleeves at the beginning of extraction after break-in and prolonged operation is within R_a 0,3...0,6 microns, the working surface of the last flight, the outlet flange and cone have R_a 1,2...5 microns of roughness value. There is also the same difference in the microtopography of the working surfaces.

Thus, on the basis of the studies, established features of the microtopography of the surface of the worn parts testify to the different mechanism and type of wear of parts of the inlet and outlet of the presses.

These results should be considered when selecting materials for the manufacture of press parts and for predicting the durability of the presses and calculation of spare parts.