# SUMMARY OF PRESENTATIONS ON TECHNOLOGY OF RAPESEED PROCESSING

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During the session there were presented 10 lectures and 42 posters, together 52 communications from 10 countries.

The topics of the papers presented in section IV could be divided as follows:

- chemistry and composition of seeds - 12,
- chemistry and composition of oil - 11,
- studies on some technological parameters in the processing of seeds and oil - 12,
- analytical problems - 17

The first group of communications contained five papers dealing with problems of rapeseed proteins and seven dealing with the problems of glucosinolates in seeds.

B.Uppström et.al. /Sweden/, M.Sandmann et al. /F.R.G/ and K.D.Schwenke et al. /G.D.R./ gave new information about the composition and structure of rapeseed proteins. R.Mothes et al. /G.D.R./ studied the insoluble protein -phytic acid complexes, K.D.Schwenke /G.D.R./ gave the results of modification of rapeseed albumin by acetylation.

The sinapine problems were studied by I.Lamour et al. /France/ and K.J.Dąbrowski et al. /Poland/. It was possible to eliminate 70-90% of sinapine from rapeseed meal using aceton-methanol-water mixture for extraction.

W.Thies /F.R.G./ gave information on the effective method for isolation of cristaline glucosinolates from seed meal.

R.Lange /G.D.R./ studied glucosinolates and their breaksdown products in different varieties of rapeseeds. The seeds were classified into three groups:

- seeds with 80-95% of oxazolidinethiones and isothiocyanates in breakdown products,
- seeds with similar proportion of oxazolidinethiones and nitriles,
- seeds with 65-75% of nitriles in breakdown products.

Two papers were dealing with myrosinase in rapeseeds. A.Bones /Norway/ studied the myrosinase activity in different organs of rape and the changes during the storage. It was observed that the myrosinase activity decreases differently in different organs of a plant.

The second group of papers gives valuable information on the oil from the new variates of rapeseed.

J.Pokorny et al. /Czechoslovakia/ have compared the composition of oil from seeds of double zero and single zero oilseed rape cultivated in Czechoslovakia.
Z.Hazuka et al. /Poland/ studied the pigments composition in double low rapeseed oil of Polish origin. It was stated that 90% of the carotenoid pigments was lutein at the level close to 100 ppm. Chlorophyll A was present at the level 60-90 ppm.

I.Goraj-Moszora et al. /Poland/ studied the composition of phospholipids of double low rapeseed. It was found that the composition was as follow: phosphatidylcholine 56,5%, phosphatidylethanolamine 17,9%, phosphatidylinositol 16,7%, phosphatidylglycerol 4,3%, lysophosphatidylcholine 2,6%, phosphatidyl acid 2,0%.

I.Bratkowska et al. /Poland/ evaluated the $\alpha$-tocopherol in rapeseed oil.

J.K.Daun /Canada/ determined the chlorophyl content in different rapeseeds. The top grade seeds contained 9 to 16 ppm the average grade seeds - 18-22 ppm. The seeds with chlorophyll content up to 25 ppm gave oil with chlorophyll content close to 30 ppm considered as a standard.

B.Drozdowski et al. /Poland/ gave the information on the changes of the minor components in double low rapeseed oil during processing.

J.Bielawny /Poland/ studied the behaviour of rapeseed oil during storage by 276°K, 280°K and 293°K. The equation for calculation of the peroxyde value of oil during storage was given.

Four papers from Poland were dealing with the transformation of rapeseed oil for chemical purposes. I.Mazgajska has studied the high pressure splitting of oil. H.Szczepańska et al. gave the results of the study on isomerization of low erucic rapeseed oil for utilization as row material for varnishes. W.Wasilewicz - Niedbalska studied the methatesis of methyl erucate. J.Miesiąc et al. described the experiments of direct ammonolysis of rapeseed oil to alkilnitriles and glycerine.

The third group of papers were dealing with the studies on technological problems of seeds /9/ and oils /3/.

F.H.Schneider et al. /F.R.G./ described the head-end dehulling of rapeseeds. The results obtained with different seeds were given.

P.Burghart et al. /France/ informed that some French specialists considered that the double zero rapeseeds varieties can be more difficult to process. Comparing five varieties of rapeseed it was found that two double zero varieties out of three studied are more difficult by pressing and extraction.

J.Čmolik /Czechoslovakia/ studied the chemical changes especially of phospholipids and sulfur compounds in double zero seeds during processing.

Two papers were given by F.Shahidi /Canada/ on the methanol-ammonia-water and methanol-ammonia-water-hexane treatment of Canola. By these treatments the intact glucosinolates were extracted into polar phase with the yield of 90 per cent.

Two Polish papers dealed with the influence of the hydrothermal treatment on rapeseed. J.Fornal et al. studied the changes of ultrastructure using the electron microscopy. Z.Rudzka et al. observed the influence of such treatment on oil recovery during pressing and solvent extraction. The facilitation of oil recovery was evident.

L.Behlan /F.R.G./ described a new method for protein extraction from rapeseeds. This process gave simultaneously food-grade protein isolate and protein meal for animal feeding.

Only three papers were dealing with oil technology. P.Transfeld /G.D.R./ gave very interesting results of the study on counter current bleaching of rapeseed oil. The process combined the absorption and thermal bleaching and led to good results in chlorophyll elimination. W.Schwarz et al. /Czechoslovakia/ studied the possibility to obtain the tocopherols and sterols from deodorization scum of rapeseed oil. The proposed technology consisted of two distillations and cristalization.

J.Dedek /Czechoslovakia/ studied the hydrogenation of double low rapeseed oil and stated that this oil was much less difficult to hydrogenate than oil from low erucic varieties.