

Fig. 1- Basal diet

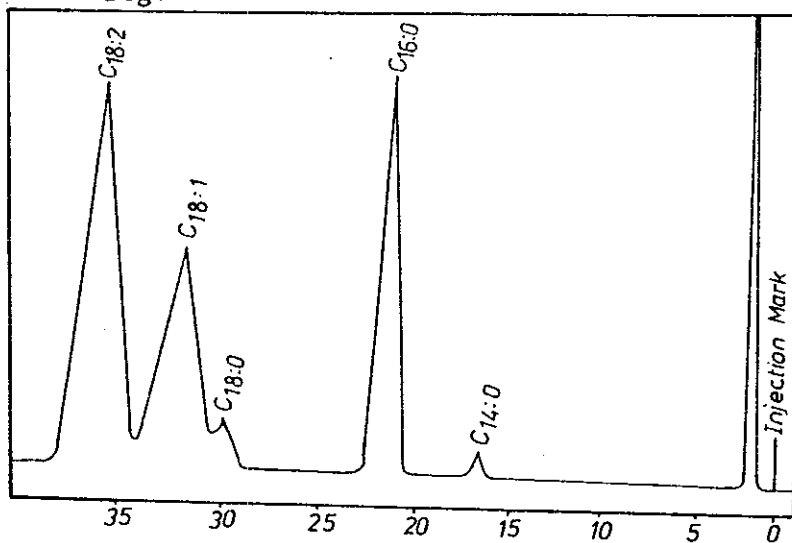


Fig. 2 - ACS

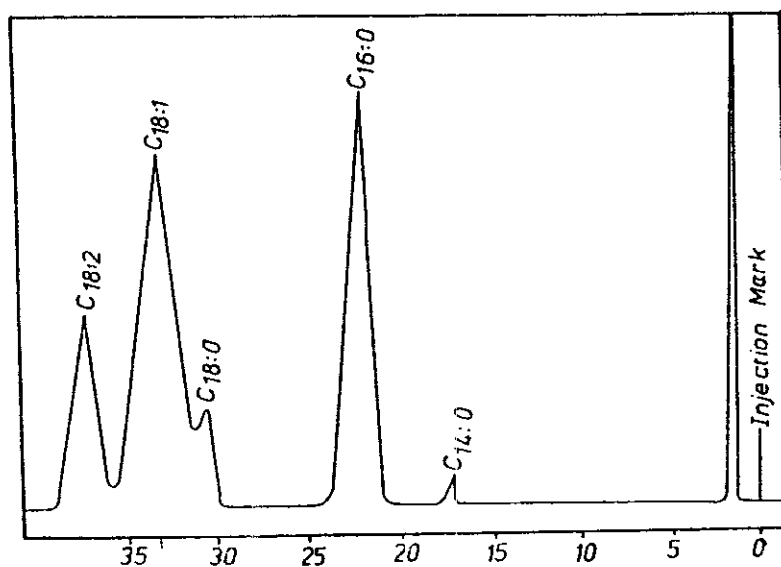


Fig. 3- HVO

GLC chromatogram of fatty acids for different diets.

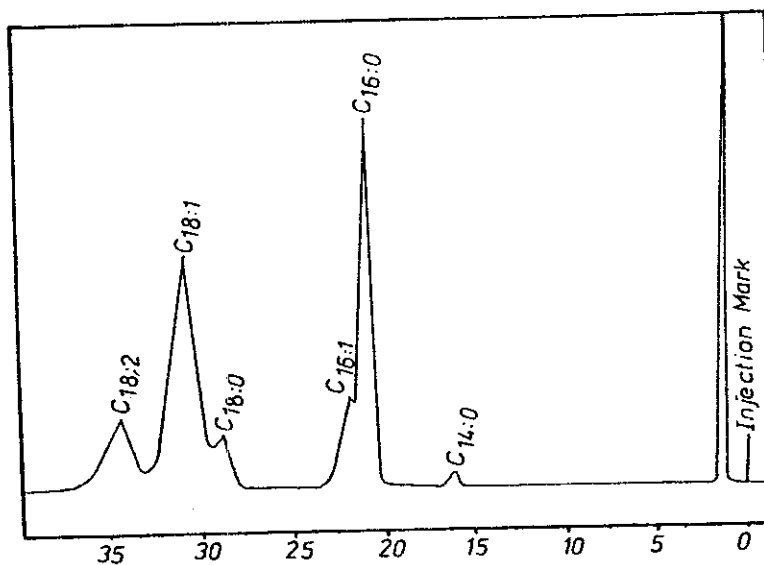


Fig. 4- Basal diet

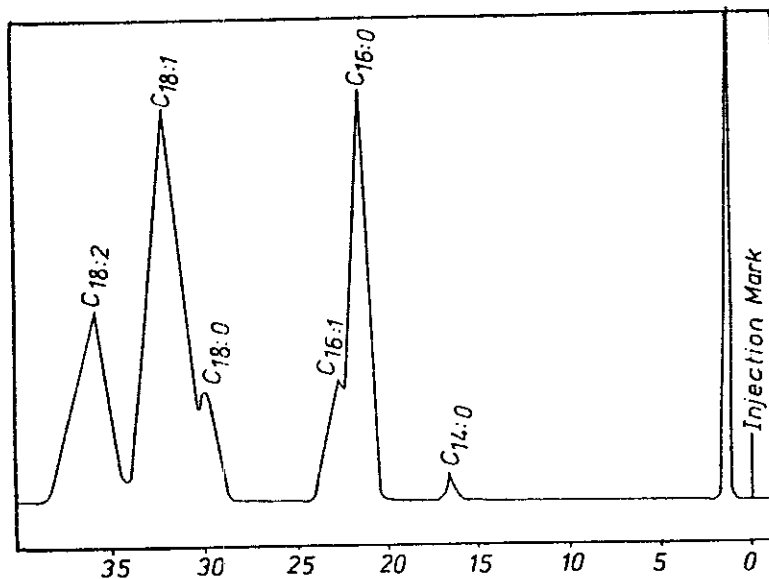


Fig. 5- 9% ACS

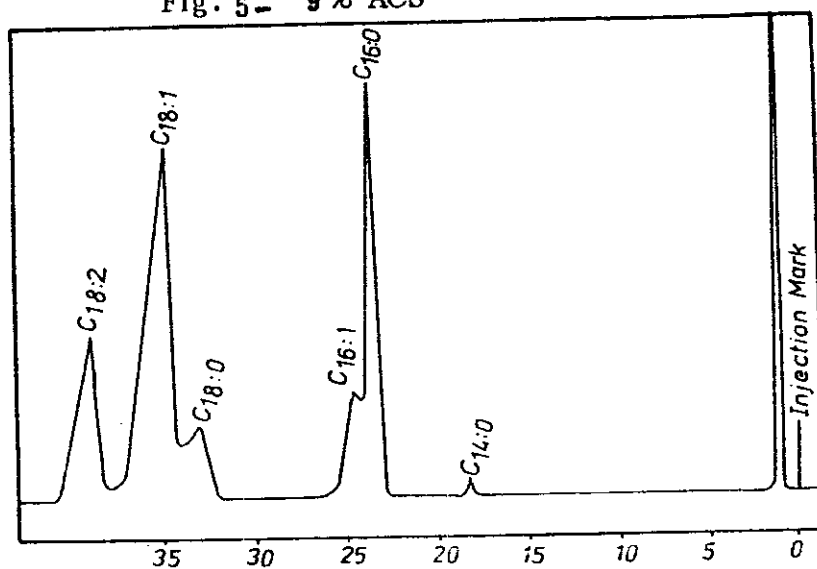


Fig. 6- 9% HVO

GLC chromatogram of fatty acids in skin fat.

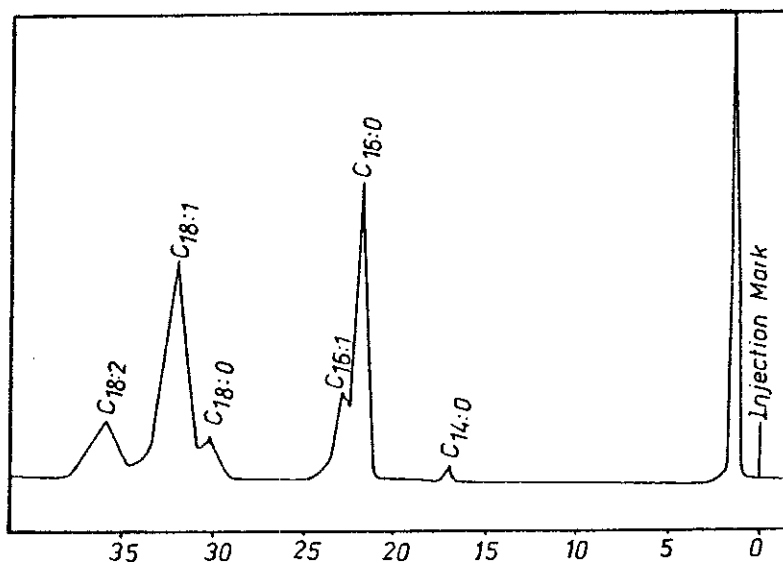


Fig. 7- Basal diet

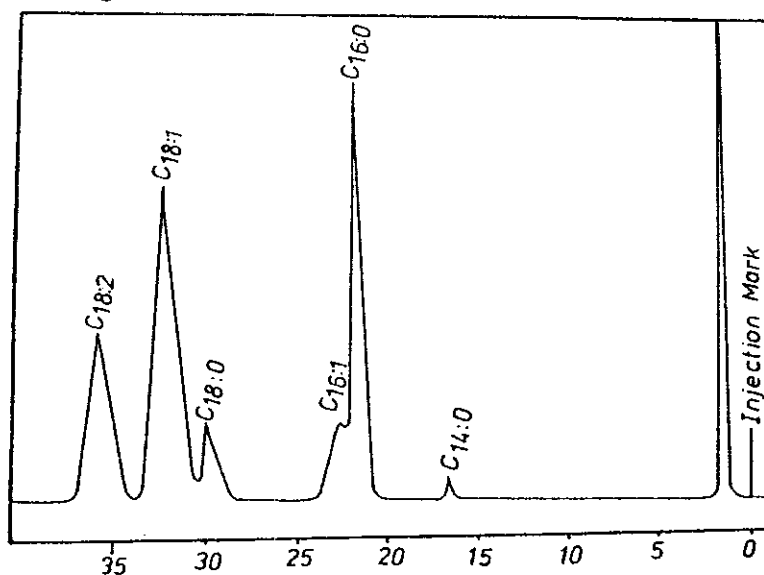


Fig. 8 - 9 % ACS

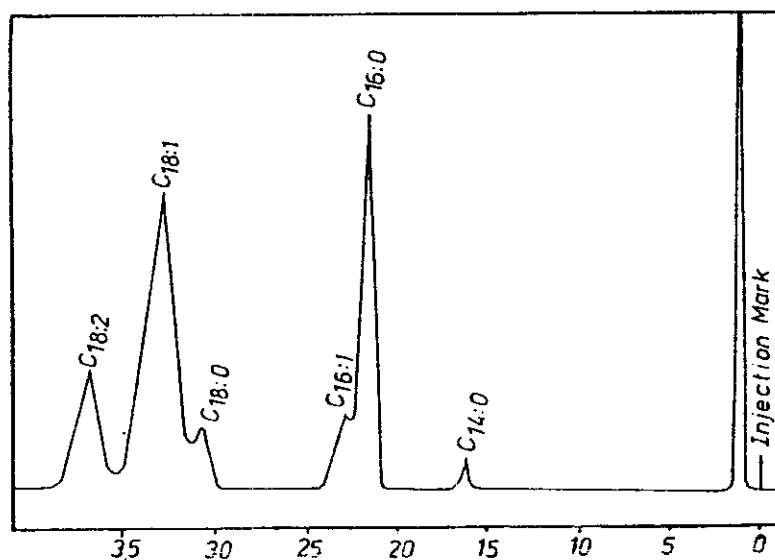


Fig. 9- 9 % HVO

GLC chromatogram of fatty acids  
in abdominal fat.

diet and ACS (41.41 and 47.48 %, respectively). Oleic acid ( $C_{18:1}$ ) was the main unsaturated fatty acid 47.01 % in HVO. So, the fat supplements differ mainly in linoleic acid ( $C_{18:2}$ ) content which is twice as high in ACS as in HVO. Also, the levels of saturated and monounsaturated fatty acids are higher in HVO than in ACS. The fatty acid composition of dietary fats are in agreement with the results reported by Lipstein *et al.* (1970) and Bartov *et al.* (1974).

The fatty acids composition of skin and abdominal fat from male Hubbard broilers at 7 weeks age under investigation were influenced by the level and source of dietary fats. Results showed that the fatty acid distribution in the abdominal adipose tissues was similar to that of the skin. The same results were confirmed by Marion and Woodroof (1963). The addition of 9 % ACS showed an increase in total percent of unsaturated fatty acids in skin and abdominal fats over control (from 61.95 to 66.32 % and from 61.57 to 65.16 % , respectively). On the contrary, addition of 9 % HVO decreased total percent of unsaturated fatty acids to reach 59.65 and 59.14 % in skin and abdominal fat respectively.

Palmitic, palmitoleic and stearic acid are presented in the depot tissues (skin and abdominal) in higher proportion than in the respective diets, indicating their synthesis by the broilers. The percentage of palmitic acid ( $C_{16:0}$ ) was 30.89 and 31.58 % in skin and abdominal fat of broilers fed the control diet which decreased to 26.34 and 27.48 % in broiler fed 9 % ACS. As well as, addition HVO to the diet increased palmitic acid percent to 33.80 and 34.55 % in skin and abdominal fat respectively. The percent of stearic acid ( $C_{18:0}$ ) of broilers fed different diets was nearly similar in each skin and abdominal fat.

On the other hand, palmitoleic ( $C_{16:1}$ ) and oleic acid ( $C_{18:1}$ ) were decreased by the addition of fat to the diet. Palmitoleic acid decreased from 6.44 and 6.85 % in skin and abdominal fat of broilers fed control diet to 4.51 and 4.08 % in broilers fed diet with 9 % ACS, and to 5.39 and 5.24 % in broilers fed diet with 9 % HVO. As well as, oleic acid decreased from 42.56 and 43.07 % to 40.36 and 41.05 % and to 39.32 and 40.36 % in skin and abdominal fat respectively. On the contrary, linoleic acid ( $C_{18:2}$ ) increased by addition of fat to the diet. Addition of 9 % ACS to the diet caused a higher