DEDICATION

To my parents, brothers and sisters

With great love

M. Sharif
ACKNOWLEDGEMENTS

Firstly, great thanks to Allah, the almighty for giving me health and strength to carry out this study.

I would like to express my deep gratitude and sincere thanks to my supervisor Dr. Hag hamad Abdelaziz for his professional guidance, valuable advice, sincere interest and supervision during the period of the study.

My appreciation extends to Dr. Abda Abdalla Imam for her valuable comments.

My sincere gratitude to all members of the Department of Agricultural Economics, Faculty of Agricultural studies, Sudan University of Science and Technology. Also thanks are extended to the universities and organizations in the study area.

My appreciation extended to all colleagues and friends at Shambat campus for their hospitality during my stay especially
Mr. Mohammed Mubarak for printing the thesis.

Finally, special thanks and gratitude to my mother, father, brothers, sisters and my wife for their kindness, moral support, motivations and help in many ways.

ABSTRACT

The objective of this study was to examine the main factors affecting price determination behavior of sesame crop in the mechanized rain-fed sector in Gedarif area.

The study was based on monthly whole sale prices of sesame in Gedarif market during the period from January 1999 to December 2008.

The temporal analysis was used to examine the fluctuations in monthly prices and seasonal patterns.

The temporal analysis showed that the prices were instable as revealed by the results of the coefficients of variation and fluctuation percentage. The grand seasonal indices indicated that the trend in seasonal prices was pronounced but unstable, this was indicated by standard deviations. The lowest prices of sesame prevailed during the
harvest seasons and the higher prices prevailed during the post harvest seasons.

The study recommended the following:

1) To improve market information system (volume of supply, demand and prices). There must be adequate information both at producers and wholesalers levels.

2) The government should reconsider suitable resources against the oligopolistic group to maintain perfect competition to protect producers.

3) To expand storage facilities and distribute them over wide areas to minimize losses.
الملخص

تهدف هذه الدراسة إلى اختبار العوامل المؤثرة في سلوك تحديد أسعار السمسم في القطاع المطري الآلي في منطقة القضارف.

اعتمدت الدارسة على أسعار الجملة الشهرية لحصول السمسم في سوق القضارف خلال الفترة من يناير 1999م إلى ديسمبر 2008م.

استخدمت طريقة التحليل الزمني لاختبار التذبذبات في الأسعار الشهرية ولمّشر الموسمية.

أظهر التحليل الزمني أن هنالك تذبذب في الأسعار والذي قيس بواسطة نتائج عامل الاختلاف ونسبة التذبذب. أظهرت مؤشرات الموسمية أن الإتجاه العام الموسمية الأسعار واضح ولكن غير مستقر ولا يمكن توقعه وضح ذلك من خلال الانحرافات المعيارية. الأسعار الدنيا لحصول السمسم تسود في مواسم الحصاد وترتفع بعد شهر الحصاد.

أوصت الدراسة بالآتي:

1- تحسين نظم معلومات السوق (حجم العرض والطلب والأسعار).

2- على الحكومة أن تعيد النظر في الموارد المناسبة ضد جماعة احتكار القلة لحفاظ على المنافسة الكاملة لحماية المنتجين.

3- توسيع مراقب التخزين وتوزيعها على مناطق واسعة للحد من الخسائر وتقليل تقلب الأسعار.
List of Contents

Dedication i
Acknowledgments ii
English abstract iii
Arabic abstract v
List of contents vi
List of tables ix
List of figures x
List of appendices xi
Chapter One 1
1.1 Introduction 1
1.2 Problem statement of the study 5
1.3 Objectives of the study 6
1.4 Hypotheses of the study 6
1.5 The research methodology 6
1.5.1 Data collection 6
1.5.2 Analytical techniques 7
1.6 Organization of the study 7
Chapter two 8
Literature review and previous studies 8
2.1 The behavior of farm prices 8
2.2 Forces influencing farm prices 8
2.3 Farm and food price trends 10
2.4 Commodity price fluctuations 12
2.5 Price Analysis: Concepts and tools 13
2.5.1 Time dimensions 13
2.5.2 Trend 13
2.5.3 Cyclical 16
2.5.4 Seasonal 17
2.6 Price discovery 18
2.6.1 Price discovery as interaction of supply and demand 19
2.7 Pricing efficiency 19
2.7.1 Concepts of pricing efficiency 19
2.7.1.1 Pricing efficiency at the firm level 19
2.7.1.2 Pricing efficiency for the system 20
2.7.2 Countervailing developments against pricing inefficiency 21
2.8 Classification of markets 21
2.9 Price determination under pure competition 23
2.10 Price determination under monopoly 24
2.11 Price behavior with monopolistic competition and oligopoly 27
2.12 Temporal price analysis 30

Chapter Three
Methods of analysis 32
3.1 Temporal analysis 32
3.1.1 Inter-year fluctuations of the monthly prices 32
3.1.2 Decomposition of time series prices 33
3.1.3 The seasonal components 37
3.1.3.1 The grand seasonal index 37
3.1.3.2 Efficiency and identification of temporal price patterns 37

Chapter Four
Temporal analysis results 39
4.1 Fluctuations 39
4.2 Decomposition of time series 42

Chapter Five
Summary, conclusions and recommendations 56
5.1 Summary 56
5.2 Conclusions 58
5.3 Recommendations 58
References 59
Appendices 61
# List of tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table (1.1): Area, production and yield of sesame in Sudan (1996-2007)</td>
<td>4</td>
</tr>
<tr>
<td>Table (4.1): Fluctuations in Gedarif monthly nominal prices of sesame (1999-2008)</td>
<td>44</td>
</tr>
<tr>
<td>Table (4.2): Grand Seasonal Index in Gedarif (1999-2008)</td>
<td>52</td>
</tr>
<tr>
<td>Table (4.3): Analysis of seasonal indices for sesame in Gedarif (1999-2008)</td>
<td>55</td>
</tr>
</tbody>
</table>
# List of figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure (4.1): Monthly nominal prices of sesame in Gedarif market (1999 - 2008)</td>
<td>40</td>
</tr>
<tr>
<td>Figure (4.2): Deflated prices of sesame in Gedaref market (1999 - 2008)</td>
<td>41</td>
</tr>
<tr>
<td>Figure (4.3a): Trend and monthly nominal prices of sesame in Gedarif market (1999 - 2008)</td>
<td>45</td>
</tr>
<tr>
<td>Figure (4.3b): Monthly nominal prices of sesame and CMA(^{12}) in Gedarif market (1999 - 2008)</td>
<td>46</td>
</tr>
<tr>
<td>Figure (4.4a): Trend line of sesame prices in Gedarif market (1999 - 2008)</td>
<td>47</td>
</tr>
<tr>
<td>Figure (4.4b): Seasonal index of sesame monthly prices in Gedarif market (1999 - 2008)</td>
<td>48</td>
</tr>
<tr>
<td>Figure (4.4c): Cyclical index of sesame monthly prices in Gedarif market (1999 - 2008)</td>
<td>49</td>
</tr>
<tr>
<td>Figure (4.4d): Irregular index of sesame monthly prices in Gedarif market (1999 - 2008)</td>
<td>50</td>
</tr>
<tr>
<td>Figure (4.5): Grand seasonal index for sesame in Gedaif market</td>
<td>53</td>
</tr>
</tbody>
</table>
List of appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix (1): Nominal and deflated prices of sesame in Gadarif (SDG/Kanter)</td>
<td>61</td>
</tr>
<tr>
<td>Appendix (2): Temporal analysis for nominal sesame prices in Gadarif market (1999-2008)</td>
<td>66</td>
</tr>
<tr>
<td>Appendix (3): Monthly average prices of sesame (SDG/Kantar) in Gedarif market during the period (1999 – 2008)</td>
<td>69</td>
</tr>
</tbody>
</table>