

# INDEX

<b>1. INTRODUCTION .....</b>	<b>1</b>
<b>2. OBJECTIVES .....</b>	<b>51</b>
<b>3. SCIENTIFIC CONTRIBUTION .....</b>	<b>55</b>
<b>3.1. SECTION I. Off-line Inspection .....</b>	<b>59</b>
3.1.1. CHAPTER I. Prediction of the level of astringency in persimmon using visible and near-infrared spectroscopy .....	61
3.1.2. CHAPTER II. Sweet and nonsweet taste discrimination of nectarines using visible and near- infrared spectroscopy .....	97
3.1.3. CHAPTER III. Visible and near-Infrared diffuse reflectance spectroscopy for fast qualitative and quantitative assessment of nectarine quality .....	125
3.1.4. CHAPTER IV. A new internal quality index for mango and its prediction by external visible and near-infrared reflection spectroscopy ...	155
<b>3.2. SECTION II. Processes Automation .....</b>	<b>187</b>
<b>II.A. Robotic Inspection .....</b>	<b>189</b>
3.2.1. CHAPTER V. Non-destructive assessment of mango firmness and ripeness using a robotic gripper .....	191
3.2.2. CHAPTER VI. Integration of simultaneous tactile sensing and visible and near-infrared reflectance spectroscopy in a robot gripper for mango quality assessment .....	217
<b>II.B. In-line Inspection .....</b>	<b>245</b>
3.2.3. CHAPTER VII. In-line application of visible and near infrared diffuse reflectance spectroscopy to identify apple varieties .....	247
<b>4. GENERAL DISCUSSION .....</b>	<b>271</b>
<b>5. CONCLUSIONS .....</b>	<b>275</b>
<b>6. FUTURE PERSPECTIVES .....</b>	<b>281</b>

