

Contents

Part I Introduction

The Atmosphere from an Ecological Viewpoint. Y.I.Chirkov	2
---	---

Part II Physical and Meteorological Principles of Agrometeorology

1 Solar Radiation. J.Seemann. With 2 Figures	6
2 The Biological Effects of Light. J.Seemann. With 2 Figures	17
3 Net Radiation. J.Seemann. With 1 Figure	22
4 Radiation Measurement Technology. J.Seemann. With 2 Figures	26
5 Heat Balance. J. Seemann. With 2 Figures	32
6 Heat Flux in the Soil. J.Seemann	35
7 Heat Transport in the Air. J.Seemann	38
8 Measuring Technology. J.Seemann	40
9 Transfer of Quantities of Air Masses. B.Primault. With 7 Figures	46
10 The Wind. B. Primault. With 5 Figures	62
11 Transportation of Particles by Air Masses B. Primault. With 1 Figure	74
12 Wind Measurement. B. Primault. With 14 Figures .	84
13 Future Development of Measuring Techniques and Research in Agrometeorology. B. Primault	97

Part III Applied Agrometeorology

1 Agricultural Climatology. J.Seemann. With 2 Fi- gures	108
2 Agrometeorological Statistics and Models. J. Seemann. With 2 Figures	115
3 Agrotopoclimatology. J. Seemann. With 1 Figure .	125
4 Soil Climate. Y.I.Chirkov. With 2 Figures	131
5 Microclimate and Phytoclimate. Y.I.Chirkov . . .	139
6 The Climate of Meadows and Pastures. Y.I.Chirkov	142
7 The Climate of Grain Crops. Y.I.Chirkov	145

8	The Climate of Trees, Orchards, and Forests. B. Primault. With 5 Figures	152
9	Improving a Climate for Agricultural Purposes. Y. I. Chirkov	163
10	Greenhouse Climate. J. Seemann. With 7 Figures	165
11	Open Fields and Shade. J. Seemann. With 1 Figure	179
12	Optimum Climate for Animals. B. Primault. With 2 Figures	182
13	The Climate Inside Animal Shelters. B. Primault. With 1 Figure	190
14	Plant Climate (Heating and Cooling). B. Primault. With 5 Figures	200
15	Droughts, Dry Winds, Dust Storms, and Hail. Y. I. Chirkov	212
16	Irrigation. J. Lomas and J. Levin. With 21 Figures	217
17	Special Forecasts. Y. I. Chirkov	265
18	Agrometeorological Forecast Systems. Y. I. Chirkov	266
19	Forecasting the Minimum Temperature. B. Primault	278
20	Epidemiology of Insects and Other Diseases. B. Primault. With 2 Figures	285
21	Water Requirements of Plants. J. Seemann. With 1 Figure	294
22	The Climate of Agricultural Produce in Transport and Storage. J. Seemann	298
23	Usefulness of Agroclimatology in Planning. B. Primault. With 1 Figure	305
24	Use of Agroclimatology in Crop Distribution. Y. I. Chirkov	317
Subject Index		321