Appendix V

Crop heat requirements

Tab. 1 Winter wheat thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	2 X-14 X	3	93
plant emergence – tillering	14 X-8 XI	3	100
spring vegetation start – stem elongation	24 III-9 V	3	262
stem elongation– ear emergency	9 V-6 VI	8	169
ear emergency– dough stage	6 VI-28 VII	10	404
spring vegetation start – dough stage	24 III-28 VII	4	1215

Tab. 2 Spring wheat thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	1 IV–15 IV	1	113
plant emergence – ear emergency	15 VI-9 VI	4	544
ear emergency – dough stage	9 VI-27 VII	6	362
sowing – dough stage	1 IV–27 VII	4	1210

Tab. 3 Rye thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	23 IX-2 X	3	84
plant emergence – tillering (autumn)	2 X-8 XI	4	148
spring vegetation start – stem elongation	24 III-26 IV	4	115
stem elongation – ear emergency	26 IV-20 V	5	119
ear emergency – dough stage	20 V-25 VII	9	520
spring vegetation start – dough stage	24 III–25 VII	4	1172

Tab. 4 Winter triticale thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	2 X-14 X	3	93
plant emergence – tillering	14 X-8 XI	3	100
spring vegetation start – stem elongation	22 III–28 IV	3	166
stem elongation – ear emergency	28 IV–26 V	6	198
ear emergency – dough stage	26 V–22 VII	8	520
spring vegetation start – dough stage	22 III–22 VII	3	1253

Tab. 5 Winter barley thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	15 IX–1 X	3	155
plant emergence – tillering (autumn)	1 X–1 XI	3	173
tillering (spring) – stem elongation	24 III–9 V	4	215
stem elongation – ear emergency	9 V–25 V	8	92
ear emergency – dough stage	25 V–5 VII	10	270
spring vegetation start –dough stage	24 III–5 VII	4	888

Tab. 6 Spring barley thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing - plant emergence	20 III–3 IV	1	108
plant emergence – ear emergency	3 IV–24 V	2	580
ear emergency – dough stage	24 V–30 VI	9	291
sowing – dough stage	20 III–30 VI	2	1234

Tab. 7 Maize thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	1 V–6 V	6	36
plant emergence – tassel emergency	6 V–18 VII	6	737
tassel emergency - silking	18 VII–11VIII	6	298
silking – dough stage	11 VIII–10 IX	6	310
plant emergence – dough stage	1 V–10 IX	6	1381

Tab. 8 Potato thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
tuber planting – plant emergence	24 IV–27 V	7,5	176
plant emergence – flowering	27 V–5 VII	7,5	359
flowering – decay	5 VII–24 VIII	7,5	623
decay – harvest	24 VIII–19 IX	7,5	96
tuber planting – harvest	24 IV–19 IX	7,5	1255

Tab. 9 Winter rape thermal requirements.

developmental stage	average stage date	thermal threshold	sum of effective temperatures
sowing – plant emergence	26 VIII–6 IX	0	188
plant emergence – autumn vegetation pause	6 IX–6 XII	0	709
spring vegetation start – stem elongation	23 III-1 IV	0	49
stem elongation - bud-formation	1 IV–14 IV	0	98
bud-formation – flowering	14 IV–6 V	0	223
flowering – full ripeness	6 V-22 VII	0	1248
spring vegetation start –full ripeness	23 III–22 VII	0	1618