



To prevent Phytophthora & other health problems

**Result projects MDM and PADGG 2005-2008
(the Netherlands)**

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Step-by-step plan potatoes for Northwest European cultivation. In other areas the same Sun and Moon elements can be used, suitable for the area and for the improvement of area specific problems.

STEP-BY-STEP PLAN POTATOES

Structural Phytophthora in tubers can be prevented by structurally using a tillage time that is up to now not used enough for potatoes. This is the tillage time between February 15 and March 10, or an alternative time between November 1 and 19 in the previous autumn. Recent findings indicate that this measure can also completely push back Phytophthora in the crop. In addition the annual seed-bed cultivation must be carried out between March 10 and April 19 and certain tillage times must be avoided as much as possible, like the much used period of April 19 to May 24.

Finally there are very good possibilities for the use of more appropriate varieties with tillage times. It adds a supplementary improvement to the tuber and crop type and improves the crop specific health problems, also regarding Phytophthora.

All tillage is alternately carried out on Moon-Fire and Moon-Earth days, where each period has its own preference, see step 1 and 2. Alternation however is more important than the preference. If the moon influence in relation to the tuber and/or crop type is known (step 3 and 4), then it can be used as well. By carrying out these measures simultaneously the expectation is that the highest possible health level in the tubers and crop will be achieved. The method will be in its entirety described in the next step-by-step plan.

Step 1: seed-bed cultivation

Seed-bed cultivation is always carried out between March 11 and April 17 on Moon-Earth days, or alternatively on Moon-Fire days. On those days, if possible, planting will also be done and already earthed up as much as possible. This tillage time reduces scabies, is minimally neutral in relation to Phytophthora in the tuber and produces coarse tubers.

To earthen up in this period as much as possible, tillage between April 19 and May 24 is avoided on purpose.

The fact is that tillage in that period produces the highest scabies effects and Phytophthora effects, as well in the tuber as in the crop. If it is necessary to earthen up in that period, for instance because of weed pressure, then it has to be done as shallow as possible to minimize the negative effect.

Always avoid tillage in the following Sun periods:

- August 10 to September 15 (preceding autumn)
- December 19 to January 18 (preceding winter)
- April 19 to May 24.

Every tillage in these periods increases Phytophthora and scabies. If tillage must be done in this period, do it as shallow and as less intensive as possible, to reduce the damage. Or choose a variety that slightly fits in these periods, see step 3 and 4.

Step 2: autumn tillage in november

In the preceding autumn an intensive tillage is carried out between November 1 and 19. Preferably on days with the Moon in Fire constellation, or alternatively Moon in Earth constellation.

An intensive tillage is a process in which the soil substantial loosens up at a sufficient depth. For example digging or ploughing where the lumps of earth are substantial loosened up, is a good option. Leave the soil as irregular as possible to prevent the soil from closing up by weather conditions. This is the most important tillage time in the autumn to push back Phytophthora and also Rhizoctonia and therefore must always be used if possible. By this the number of tubers and the underwater weight is increased.

Alternative for step 2

If the tillage time of step 2 can not be used, for example due to weather conditions, then the alternative is a similar tillage between February 15 and March 10. That tillage time has the same effect and is also used on Moon-Fire or Moon-Earth days. Because it is uncertain to know beforehand if this tillage is going to succeed, a tillage in the preceding autumn is preferable if possible.

Step 3 and 4: use of appropriate species

The tillage periods mentioned in step 1 and 2 are necessary for every potato crop, unless seed-potatoes can be bought that already have that quality in them, but those are currently not available. Outside these periods it might however be desired to do tillage for potatoes in other periods. That depends on the type of soil and can differ per year. It can be anticipated by the use of appropriate species.

The result is a further improvement of the yield and species specific quality and health. The use of alternately Moon-Fire and Moon-Earth days is also here advised.

● Potato varieties with small and many tubers (step 3) and/or a strong branched crop with small leaves (step 4)

are preferred if intensive tillage still has to be done between

- August 11 and September 15 (preceding autumn)
- December 19 and January 18 (preceding winter)
- April 19 and May 14.

● Potato varieties with long tubers (step 3) and/or a crop with high stems (step 4)

are preferred if in addition to step 1 and 2 tillage has to be done between:

- September 15 and November 1 (preceding autumn)
- January 18 and February 15 (preceding winter)
- May 24 and June 19 (with late earthing up)

● Potato varieties with coarse round tubers (step 3) and/or a crop with coarse leaves (step 4)

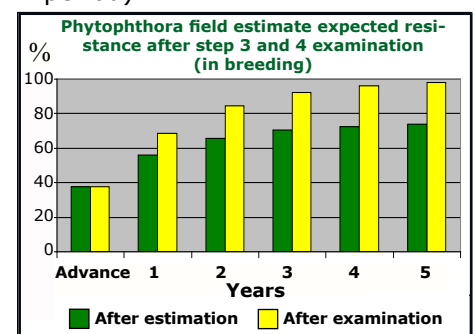
are preferred if only step 1 and 2 or if additional tillage is done between:

- July 19 and August 10 (preceding summer)
- November 19 and December 19 (preceding autumn)
- March 11 and April 19 (with additional cultivation in this period)

● Potato varieties with fine tubers (step 3) and/or a crop with fine leaves (possibly also early species)

are preferred if in addition to step 1 and 2 extra tillage is done between:

- November 1 and November 19 (with additional tillage in that period)
- February 15 and March 10 (with additional tillage in that period).



Appropriate Mon Periods Agrikos use the monthly calendar