

Rudolf Steiner's Indications Regarding Cosmic Influences
Upon the Growth of Plants

By John Bach

In this essay, it is my endeavour to discuss indications given by Rudolf Steiner on the various ways cosmic bodies influence the growth of plants. Recent writings by Andrew Lorand and Brian Keates have outlined current views and methodologies that are behind the various published biodynamic planting calendars. In particular, there has been widespread debate and discussion surrounding the work, research and methodology originally started by Maria Thun. Various calendars which follow the ideology of Thun are now published, and reach a growing audience. Research by Spiess and others, of which most in the Agricultural Section will be familiar with, have raised the question as to the effectiveness of the Thun approach. The increased use of pesticides and herbicides, coupled with the growing number of crops that are being genetically modified, including recent FDA approval of the first perennial GMO crop (alfalfa) have heightened awareness of the need and urgency for change. The biodynamic method has witnessed widespread interest recently, and has been included in several high profile documentaries (Queen of the Sun, Ingredients: Who's your Farmer, The Real Dirt on farmer John). As members of the Agricultural Section of the Anthroposophical Society, we are at the forefront of the biodynamic movement, and we must set about the goal of ensuring that the methods that are employed in biodynamics are effective and will produce the best results. In light of this, the fundamental question must be asked: What did Rudolf Steiner say about the relationship between the growth of plants and the cosmos? This information must form the foundation upon which research in this direction is undertaken. I am of the belief that members of the Agricultural Section are best able to undertake this research, and those members, whether on large farms or small urban gardens can make contributions to this end. A research model outlining what shape this might take will be presented at the end of this essay.

The first relationship between plants and cosmic influences given in the Agricultural Course occur in the first lecture, and describe the different planets and their relationship to silica and limestone. Steiner spoke as follows: "Everything that lives in the silicious nature contains forces which come not from the earth, but from the so called distant planets, the planets beyond the Sun- Mars, Jupiter and Saturn" (p. 24). Silica is the conduit through which the forces of the distant planets work. "On the other hand, from all that is represented by the planets *near* the Earth - Moon, Mercury and Venus- forces work via the limestone and kindred substances" (p. 24). These two sets of planetary influences and their corresponding relationship to silica or limestone affect two main areas of plant development. The distant planetary forces of Mars, Jupiter and Saturn affect what Steiner called everything that can be described as foodstuffs for animal and man. This would include, for example, foods like carrots and potatoes, or the flesh of fruits. Conversely, the limestone mediated forces of the inner planets influence "everything connected with the inner force of reproduction and growth- everything that

contributes to the sequence of generation after generation in the plants...” (p. 25). Hence, with the forces of the inner planets that work via the limestone nature of the earth, the process which ultimately leads to the formation of seeds takes place. Steiner then asks the following question: “If forces come into the earth from Moon, Venus and Mercury and become effective in the life of plants, by what means can the influences of Moon or Saturn on the life of plants be hindered, and by what means assisted”(p. 25)?

Here, Steiner leaves some gaps as to the working of the three inner planetary bodies. He states: “Water, in effect, is eminently suited to prepare the ways within the earthly domain for those forces which come, for instance, from the Moon. Water brings about the distribution of the lunar forces in the earthly realm” (p.26). Lack of water diminishes the ability of these forces to penetrate the earth. Steiner, in answering the question he was asking, does not expressly indicate that the forces from Venus and Mercury, which are also forces that work via the limestone forces of the Earth, are strengthened by rain. I make the assumption that they are, as in the question he asks, he includes these planetary bodies, and throughout the entire Agricultural Course, Steiner speaks of these three planetary bodies as working together in particular ways on the growth of plants. Another reference into the workings of Venus, Mercury, and the Moon is given, also in lecture one, where Steiner comments that the annual plants, those that live for only one year or season are “connected with those planets whose period of revolution is short”(p. 27). He elaborates further on the forces of these inner planets and the Moon in lecture six by saying “...we have all the influences that come in from the Cosmos – from Venus, Mercury and the Moon – and ray back again, working upward from below. Everything that works in the Earth in this way causes the plants to bring forth what grows in a single year and culminates in seed formation” (p. 108). The limestone substance of the Earth absorbs these forces of the inner planets and then rays them back up again into the plant.

The forces of the outer planets of Mars, Jupiter and Saturn are not strengthened or weakened by rain or lack thereof, but instead by the forces of warmth: “That, on the other hand, which frees itself from the transitory nature – that which surrounds the trees with bark and rind and makes them permanent, is connected with the planetary forces which work via the forces of warmth and cold and have a long period of revolution, as in the case of Saturn thirty years; of Jupiter: twelve years” (p. 108). Steiner then goes on to add specific examples:

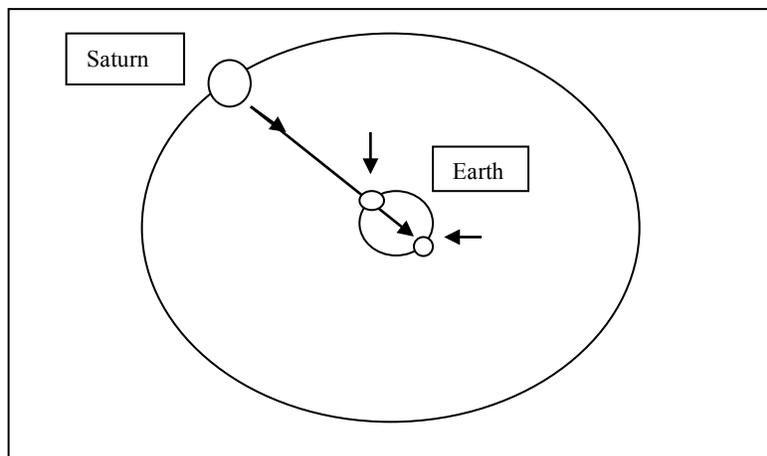
If someone wishes to plant an oak, it is of no little importance whether or no he has a good knowledge of the periods of Mars; for an oak, rightly planted in the proper Mars period, will thrive differently from one that is planted in the Earth thoughtlessly, just when it happens to suit.

Or, if you wish to plant coniferous forests, where the Saturn-forces play so great a part, the result will be different if you plant the forest in a so-called ascending period of Saturn, or in some other Saturn period (p. 108).

From this information, the question arises ‘what is here meant as an ascending phase of Saturn?’ We must also ask if this ascending phase applies to all of the planets or just to the outer planets with slower orbital periods. My understanding of an ascending phase has to do specifically with the declination of a planet in respect to the earth’s equator. In the Northern Hemisphere, a planet is in an ascending phase when it is climbing towards mid-heaven from the equator. With regards to Saturn, ascending and descending phases last for long periods of time, sometimes many years, due to the long orbital time of Saturn. Also, if Saturn is in a descending phase in the northern hemisphere, it will be in an ascending phase in the southern hemisphere and vice-versa. The way that Saturn forces work (and perhaps Mars and Jupiter as well, although Steiner does not specifically mention these planets) is different than that of the Moon. The Moon, when it shines upon the earth, is only effective in the areas where its rays directly hit the earth (a more comprehensive discussion of the unique qualities of the Moon will occur later). Saturn, however, works somewhat differently:

For we must not forget that Saturn takes thirty years to revolve round the Sun, whereas the Moon with its phases takes only thirty or twenty-eight days. Saturn is only visible for fifteen years. It must therefore be connected with the growth of plants in quite a different way, albeit, I need hardly say, it is not only working when it shines down upon the Earth; it is also effective when its rays have to pass upward through the Earth. Sometimes it shines directly onto a given spot of the Earth. But it can also work *through* the Earth upon this portion of the Earth’s surface (p. 108).

Steiner draws a diagram similar to this:



Here we see illustrated that Saturn is able to work directly upon a point on the earth from where it is visible, or directly through the earth to a spot on the other side of the earth. I

assume that this spot is 180 degrees from where Saturn is positioned on the other side of the earth.

In the second chapter of the Agricultural Course, Steiner discusses how the colours of flowers are influenced by the planets. The Sun, in its influence on plant growth, is reflected where we see the colour green in the plant- chiefly in the leaves and stems of plants. The forces of the distant planets work with the Sun, and are reflected by the different colours of the flowers of plants. These forces work via the Sun, as indicated by Steiner's comment with flowers "are living not only the cosmic forces of the Sun, but also the supplementary forces which the Sun-forces receive from the distant planets- Mars, Jupiter and Saturn" (p. 36). These forces also affect the taste of the fruits or vegetables we eat. "In the apple you are eating Jupiter [white blossom], in the plum you are actually eating Saturn [blue blossom]" (p. 38). The planets associated with the colours of flowers are as follows:

Mars – Red
Jupiter – Yellow or White
Saturn - Blue

Thus, in regards to annual plants, to which a great deal of agriculture is directed, we see the influence of the inner planets in regards to general plant growth, and the influence of the distant planets on the colouring of flowers.

Hence, we can summarise as follows: the inner planets work on the reproductive nature of plants (seed formation) via the limestone constituents in the Earth. They also work in the development of short-lived, annual plants. The forces Moon, Mercury and Venus are strengthened by rain and weakened by dry periods. The outer planets work on all that is of nutritive value in plants via the silica constituents of the Earth. Their forces are strengthened by warmth and weakened by cold. The outer planets work in the development of longer-lived plants with bark or rind (i.e. trees and longer lived shrubs). The colouring of flowers is determined by the forces of the outer planets working with the Sun. At this point, however, we are now faced with a dilemma of sorts. Take for example, a carrot. The carrot is an annual plant; therefore it must be connected in its growth and development with the forces of the inner planets. But it also must be connected with the forces of the outer planets, as it is a 'foodstuff' plant whose value as food does not come from its seeds, but from its root. We must therefore be also dealing with the outer planets in the growth and development of the carrot. To which of these planetary forces should we pay attention to when we look to the heavens for indications on the best time to plant a carrot, or any other type of plant? Some logical deduction based on the orbital patterns of the planets can help shed light on this matter. Saturn, with its long path around the Sun of thirty years does not lend itself well to being in favourable positions at regular intervals. A favourable spring planting time for Saturn may not come about for years at a time, and as such, focussing on the outer planets for the planting of short-lived annuals does not make sense. If such an opportunity does present itself, it should, of course, be followed. Conversely, Mercury and Venus, with their short orbits around the Sun, do frequently come into positions that can be deemed as beneficial to the growth of annual plants. What would these favourable positions be and how are they to

be determined? To understand this, an understanding of the unique qualities of the Moon and its influence on all of the planets, and hence the growth of plants must be understood.

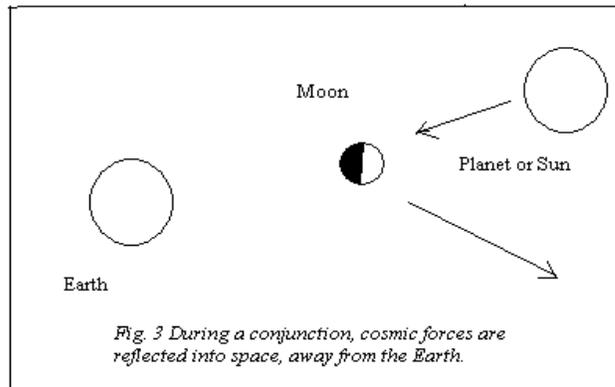
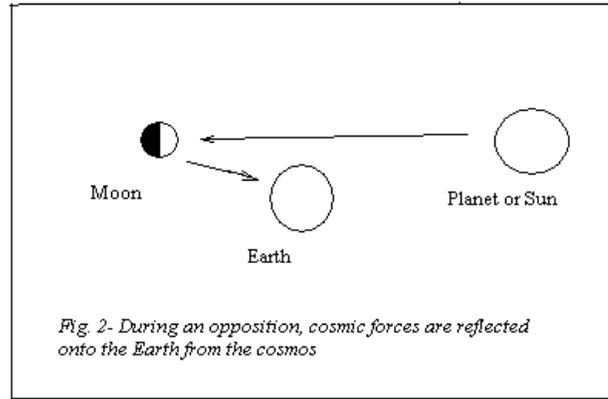
Going back to the first lecture of the Agricultural Course, we find the following passage:

In deed and in truth, with the forces that come from the Moon on days of the full Moon, something colossal is taking place on the Earth. These forces spring up and shoot into all the growth of plants, but they are unable to do so unless rainy days have gone before. We shall therefore have to consider the question: Is it not of some significance, whether we sow the seed in a certain relation to the rainfall and the subsequent light of the full Moon, or whether we sow it thoughtlessly at any time (p. 26)?

Later, in lecture six, Steiner further elaborates on this theme: “We see the rays of the Sun reflected – we catch them with our eyes – and the Earth, too, of course, receives these rays from the Moon. It is the rays of the Sun which are thus *reflected*, but of course the Moon permeates them with its own forces. They come to the Earth as Lunar forces...” (p. 109). The Earthly forces of growth are feeble and unable to sustain plants. Through the forces of the Moon, the forces of growth are strengthened to the point where they can then become reproductive forces (i.e. develop to the point of ultimately producing seed). For this reproductive power to take place, the earth “requires the forces shining in upon [it] through the Moon- and, in the case of certain plants, through Mercury and Venus too” (p. 109). From Steiner’s previous indications, we can surmise that the plants that require the forces of Mercury and Venus are seed producing annuals. But the Moon does more than just promote the growth forces in plants.

The Moon must also be considered in its role as *reflector* of the all planetary forces that it receives. Steiner states: “With the Moon’s rays the whole *reflected* Cosmos comes on to the Earth. All influences that pour on to the Moon are rayed back again. Thus the whole starry Heavens – though we may not be able to prove it by the customary physical methods of today – are in a sense rayed back to the Earth by the Moon” (p. 109-10). It is to this reflective nature of the Moon that we must pay close attention if we are to promote the best conditions for growing strong, healthy and nutritious plants. What is it, in a cosmic sense, that we see when the Moon reflects the light of the Sun, or the forces of the planets onto the earth? We see a geocentric opposition between the Moon and one of these planetary bodies. A full Moon is, after all, an opposition between the Sun and the Moon, with the Earth in the middle. Conversely, a new Moon is, geocentrically speaking, a conjunction with the Moon and the Sun, where the forces of the Sun, united with the Moon, are cast off into space. We have seen that the forces of the full Moon are greatly beneficial for the growth of plants, and conversely, the forces of the new Moon, which are reflected away from the Earth, are not of benefit for the growth of plants. Steiner states that the beneficial growth forces are “only there for a given district of the Earth when it is full Moon. When it is a new-Moon, the country does not enjoy the benefit of the Moon-influences” (p. 110). Rudolf Steiner also indicated that research into the forces of the new and full Moon should be carried out. He entrusted this task to Lily Kolisko,

whose large body of research in this regard showed conclusively this relationship to the forces of growth inherent in the full Moon. Trial after trial demonstrated much better growth and plant development in phases of the waxing Moon than in those of the waning Moon. The following diagrams demonstrate the geocentric qualities of lunar conjunction and opposition.



Thus we can establish that Steiner’s indications regarding the growth of plants involve relationships between the Moon, Sun, and the planets. The growth of all annuals depends on the forces of the inner planets, so we can ascertain from Steiner’s indications discussed here, that the best time to plant our vegetable crops would be at a time shortly before a full Moon. The exact ideal time Steiner spoke of was two days before a full Moon, but in discussions after his lectures, Steiner broadened the general favourable and unfavourable times from the appearance of the waxing and waning crescent Moon (twelve to fourteen days before the actual full and new Moon) as the time when these

phases began. Let us choose one crop, peas for example, as a case to study. Peas are a seed crop, and are therefore under the influence of the limestone forces of the inner planets. We can therefore say that the best time to plant peas would be during a waxing Moon phase, as close as possible to the ideal two days before the full Moon, *and* with a corresponding geocentric opposition between the Moon and either of the inner planets Venus or Mercury. This ideal may not always come about, and in cases where a choice needs to be made, I believe, from the work of Lily Kolisko, that the forces of the waxing Moon should receive first consideration. But there will often be cases where a balance can be struck. During the waxing phase, one of the inner planets may come into opposition with the Moon a few days before the ideal waxing phase. In such a case, it might then be the best time to plant a seed crop. This rationale would hold true for all seed and cereal crops. Research will, as Steiner indicated many times in the Agricultural Course, need to be carried out. In the case of an annual plant of nutritive value, like a carrot, where the root rather than the seed is consumed, the consideration of the outer planets must also be taken into account. As Steiner has indicated, for annual plants, the inner planets play a large role, but in the case of annuals of nutritive value, like the carrot, the outer planets also work through the silicious element of the Earth. Hence, the ideal planting time for a carrot would be during a waxing phase with a geocentric opposition between the Moon and one of the inner *and* one of the outer planets. This, of course, would be an event that would not occur on a regular basis, and because of this, the best judgement of the farmer and gardener needs to be employed.

We have so far discussed the influence of the planetary bodies and the Sun and the Moon on the influence of the growth of plants. Does Steiner indicate that there are other forces that work on the growth of plants from beyond the solar system, from the constellations? Insight into this question can again be furnished by looking at lecture 6 of the Agricultural Course. Here, Steiner discusses the issue of the biodynamic treatment of weeds and of garden pests, like mice. In the case of dealing with weeds, Steiner recommends ashing the seeds of weeds, and then spreading them on fields that are afflicted with that weed. By ashing in this way, we make the plant reluctant to grow in the Earth. In burning the seeds of weeds "...you will have concentrated in the ash the very opposite force to that which is developed in attracting the Moon-forces" (p. 111). This ashing process is carried out yearly, for four years, after which the weed in question should cease altogether to grow in the treated area. The timing of ashing of weeds is not specifically given by Steiner, but when it comes to the ashing of insects and rodents, Steiner gives specific indications that involve timing the ashing and field peppering of animals with the planets and constellations. With regards to animal pests he states: "But we can no longer speak so generally when we come to the animal pests," implying that the ashing of plants can occur at any time (p. 112). Steiner goes on to speak of the process of ashing a field mouse. Here, the timing is very specific:

Now that we are passing from plants to animals, we come to the 'animal circle' – that is to say, the 'Zodiac.' It was not called so in a meaningless way. To attain our end within the plant-world, *we can stop at the planetary system*. For the animal world, that is not enough. There, we need ideas that

reckon with the surrounding sphere of the fixed stars, notably the fixed stars of the Zodiac. Moreover, in the growth of plants the Moon-influence is well-nigh sufficient to bring about the reproductive process. In the animal kingdom, on the other hand, the Moon-influence must be supported by that of Venus (p. 113).

Steiner specifically indicates that for the field mouse, for example, ashing should take place when Venus is in the sign of Scorpio. Why is this so? Why can plants be ashed at any time, and animals must be ashed when Venus is in the sign of a specific constellation? This is because the forces within and which form plants are within the realm of the solar system, while those forces which are in and which form the animal are not only within the solar system, but also in the starry heavens as well. In the sixth lecture of the cycle *Spiritual Science and Medicine*, Steiner speaks clearly of the relationship of the cosmic forces in both plant and animal:

...as I indicated yesterday, the animal sphere is near – dangerously near to mankind. The ancients, knowing this, set a boundary which we will investigate anew in the light of our later knowledge, they thought as follows: plants remain within the realm of the planetary system; minerals are also within that sphere: but with the animal kingdom we leave the planetary system, and deal with something much more serious. We may not deal here with things as though we were still within the planetary extra-telluric domain. Those forces that leads to the formation of animals, and further to mankind lie scattered farther and wider in the universe than do those that shaped minerals and plants. And so the ancients traced the Zodiac in the heavens as a warning not to seek remedial forces beyond the boundary of minerals and plants; or at least to be aware that beyond is perilous ground (Lec. 6 paragraph 30).

This ‘perilous ground’ to which Steiner refers is in relation to the creation of homeopathic medical remedies, and the dangers that lie in creating medicines which are derived in part or wholly from the animal sphere. This passage additionally shows that the forces that are involved in the creation and growth of plants do not extend beyond the solar system. This lecture gives greater detail of the solar forces working in the various parts of the plant. For example, the spiral forces which form the central stalk of a plant are emitted from the Sun, while the formation of foliage involves the combined forces of the Sun and the outer planets of Mars, Jupiter and Saturn. The Moon, Mercury and Venus assist in the formation of roots. Steiner states: “So I would say that the plant expresses and bears the imprint of our whole planetary system”(lecture 6, paragraph 6). Further confirmation of the forces working in the formation of plants, and also of animals, can be found in Steiner’s lecture series *The Spiritual Beings of the Heavenly Bodies and in the Kingdoms of Nature*.

In lecture nine of this series, Steiner describes in detail not only the forces that work in plants and animals from the cosmos, but also the spiritual beings that are associated with these forces. After all, these forces do not come from out of nowhere; they are consciously formed and sent to the Earth by lofty spiritual beings whose abode can be found in the various heavenly bodies. The forces that construct the various animal forms are to be found in the planets of the solar system (excluding Uranus, Neptune and Pluto, which do not truly belong to the solar system). How is it that these seven forms give us the incredible diversity that we see in the animal kingdom? Steiner states:

The forces which worked down from the planet Mars, for instance and brought about in the still plastic animal substance, one of the seven principal forms, worked in a different way according to whether Mars stood before one sign of the Zodiac or before another. ...A number of different animal forms were thus made possible; and if you consider that to this must also be added the fact that Mars, for instance, can work qualifyingly when he stands before Leo so that he supplants the Lion in relation to the Earth; or that from the other side he works qualifyingly when the Earth is between the Sun and Mars; you see that there are a great number of possibilities” (lecture 9, paragraph 5).

In this beautiful lecture Steiner also discusses how the various hierarchies work into plants and animals. The Spirits of Motion work via the groups souls of animals and impulse animals into movement. They also work in the growth of plants, via the astral body of the plant, which is not in physical form, but resides in the spiritual world. The Spirits of Wisdom work in the etheric body of plants via the Sun. To delve further into this lecture and the complex relationships that it describes as the creative forces of plant and animal life would go beyond the intentions set forth in this essay, but this entire lecture series forms an excellent complement to the *Agricultural Course* in that it describes more intimately the forces that work into the plant and animal realms. Now that we have established Steiner’s indications with regard to the forces that influence the growth of plants, we can now return to the original question set out in this essay, namely, what would a Steiner - based approach to sowing look like? What would a calendar using Steiner’s indications as a foundation look like?

All sowing for annuals would occur during the week before a full moon. Specifically, Steiner indicated that the best date to plant seeds was two days before a Full Moon, but that the twelve days when the Moon is waxing is favourable. However, as we have discussed, the positions of the planets must also be taken into account. For example, April 4th, 2012 is two days before the full Moon, and also one day before an opposition between the Moon and Mercury. Mercury, being an inner planet, works on the growth of annual plants, and also on plants which we consume in seed form- peas, beans, and grains, for example. This date should be considered as a generally favourable date for all annual food plants, even though one of the outer planets (Mars, Jupiter, and Saturn) is not in a favourable position for the sowing of seeds of nutritive plants- tomatoes, melons, or root crops, for example. This date should also be considered as a good date for the

stirring and application of the BD prep 500. The inner planets work through the limestone-calcium forces of the earth, which also corresponds to the forces through which the 500 spray works. April 5th might provide the best date for any work to be carried out using 500, as this is the actual date of the opposition between the Moon and Mercury.

An ideal planting date for all annual crops would not only include an opposition between one of the inner planets during a waxing Moon, but would also include an opposition of one of the outer planets during a lunar waxing period. Such time period does occur this planting year on May 4th, which is also two days before the full Moon. The Moon is in a perfect opposition to Mercury, and is two days away from an opposition with Jupiter (May 6th). Hence, based on Steiner's indications and the time of the year, the first week of May offers the best sowing dates of the entire planting season. In addition to the sowing of annual seeds, this time period should also be considered for the stirring and application of both of the BD preps 500 and 501. The raying in of the silica forces of the outer planet Jupiter on May 6th, may offer the best date for tasks involving 501, including making 501, while the opposition between the Moon and Mercury on May 4th offers an ideal time for the application of 500. The following chart gives information, based on indications by Steiner, as to the best times to plant crops and to make and apply the BD preps 500 and 501.

Crop/Prep	Good	Better	Ideal
Annual Seed Crops (peas, corn, beans, grains, etc.)	Two days before a full Moon	Two days before a full Moon with recent rainfall	Two days before a full Moon with recent rainfall <i>and</i> an opposition between Moon and inner planet(s)
Annual Nutritive Crops (root crops, melons, squash, cucumbers, etc.)	Two days before a full Moon	Two days before a full Moon with rainfall and seasonally warm conditions prevailing	Two days before a full Moon with rainfall, seasonally warm conditions prevailing, <i>and</i> an opposition between the Moon and <i>both</i> an inner and outer planet(s)
BD 500- making and application of	Opposition between the Moon and an inner planet(s)	Opposition between the Moon and an inner planet(s) and recent rainfall	Opposition between the Moon and an inner planet(s) and recent rainfall during a waxing Moon
BD 501- making and application of	Opposition between the Moon and an outer planet(s)	Opposition between the Moon and an outer planet(s) and prevailing warm conditions	Opposition between the Moon and an outer planet(s) and prevailing warm conditions <i>and</i> a waxing Moon

This chart is meant to represent different scenarios that that may come up during a waxing phase, but as each planting year offers different cosmic conditions, farmers and gardeners will have to use their common sense and intuition to decide when the best time for sowing may occur. Additionally, the information in this essay is at odds with what can be termed as Thun-style biodynamic calendars. These calendars rely chiefly on the theory of planting in accordance with the relationship of the Moon and various constellations (trigons), as most readers of this essay will be familiar. As has been discussed, Steiner spoke in several different contexts of the realm of plant growth being restricted to the confines of the solar system, and not extending into the realm of the constellations. Additionally, one of the most important factors influencing the growth of plants, according to Steiner, which has been discussed at length in this essay, was the cycle of the waxing and waning Moon. In her book *Agriculture of Tomorrow* Lily Kolisko, initially under the direction of Rudolf Steiner, conducted hundreds of well organised and documented planting trials, where she was able to consistently show better plant growth and larger yields when sowing two days before a full Moon. Let us again repeat the words of Steiner quoted already in this essay: “In deed and in truth, with the forces that come from the Moon on days of the full Moon, something colossal is taking place on the Earth” (p. 26). Conversely, the force of the waxing Moon has not been found to be a significant factor in plant growth in Thun research. In the 2011 *Biodynamic Sowing and Planting Calendar* it is stated that “the waxing and waning Moon is not connected to the planting times or to the ascending and descending periods. Under normal growing conditions the effects of these Moon phases are so small that we seldom go into them” (p. 59).

This divergence in planting methodology between Steiner and Thun is very significant and cannot be ignored. As mentioned at the outset of this essay, the Biodynamic method is starting to receive increased attention in the light of the enormous threat posed not only to agriculture, but to the health and welfare of the Earth and all of its inhabitants by modern agricultural practices. In conversations with Ehrenfried Pfeiffer, Steiner spoke of the great importance of the biodynamic method for the welfare of humanity and the Earth, telling Pfeiffer that “the benefits of the bio-dynamic compost preparations should be made available as quickly as possible to the largest possible areas of the entire earth, for the earth’s healing” (p. 8). The biodynamic method has a great task in the times we are now living, and ensuring that all aspects of it are being correctly applied will contribute in a significant way to not only the success of biodynamics, but also to the welfare of the Earth. The correct timing of making the biodynamic preparations, of applying them, and of sowing crops is an important factor in determining the success of a crop, which will be the ultimate judge of the biodynamic method by the world outside of the Anthroposophical community. Having said this, we must come to the conclusion, based on the great divergence in methodology discussed in this essay, that either Steiner’s or Thun’s approach to planting according to cosmic influences is incorrect. The only way to ascertain the correct cosmic influences affecting plant growth is to conduct exacting research, over wide areas of the earth.

This may, at first glance, seem like a daunting task. But Steiner emphasised many times in the *Agricultural Course* that research needed to be done, and that this task should be carried out by biodynamic practitioners. In lecture six, for example, Steiner spoke in relation to the timing of the ashing of insects, saying that there is a tendency in modern culture that things must be verified. To this he responded "... good and well! Set to work and try to verify them. If you do the experiments rightly, you will soon see them confirmed" (p. 111). The problem with doing planting trials in only one area of the Earth is that there are other variables that will affect the germination and growth process. Cold or warm weather, as well as damp or dry weather can, as all farmers and gardeners are aware, play a significant role in the success or failure of a crop. One way of performing research that would alleviate this problem to a large degree would be a co-ordinated series of planting trials carried out in as many different areas of the world as possible. Cold weather affecting one area or continent would be offset by mild weather in another area, thus mitigating variables that could confound the interpretation of data. Individual research plots would not have to be large, and could be conducted by backyard gardeners as well as biodynamic farmers. The important thing would be to plant the same crop on the same days to ensure comparable data. All crops from each trial plot would be given the same amount of time to mature, and then the resultant harvest could then be weighed. The results could then be sent to members of the Agricultural Section to be interpreted.

The most obvious start would be to put to the test indications given by Steiner and compare them to those of Thun. Such planting experiments could be conducted by planting during a favourable waxing Moon period for the Steiner method, and then a corresponding favourable Thun planting period during a waning Moon. These trials should continue consecutively around every two weeks, and then *all* of the results for each set of trials should then be compared as a whole (i.e. all of the peas from a series of Steiner trials would be weighed and the weights from all the trials combined). This would best be carried out by planting one or two types of crops for the entire planting season, so as to offset as much as possible the variables associated with the significant changes that can occur over a two week period. Here is what such a set of trials might look like for the 2012 season:

Date	Steiner	Thun
April 4 th , 2012	brussels sprouts Two days before full Moon	
April 19 th , 2012		brussels sprouts leaf day/ two days before new Moon
May 3 rd , 2012	brussels sprouts three days before full Moon. Mercury opposition to Moon on May 4th	
May 4 th , 2012	peas three days before full	

	Moon. Mercury opposition to Moon on May 4 th	
Date	Steiner	Thun
May 17 th , 2012		brussels sprouts leaf day/three days before new Moon
May 18 th , 2012		peas fruit day (after 8 am GMT)/ two days before new Moon
June 2 nd , 2012	peas two days before full Moon	
June 16 th , 2012		peas fruit day (before 4 pm GMT)/three days before new Moon

In this set of trials, only two crops are used for comparison. This allows not only simplicity in performing the trials, but also uniformity. Brussels sprouts were chosen, as weighing the edible content is a fairly simple process, as is the case for peas. During a waxing phase, Steiner spoke of this as a favourable time to plant all annuals, so the choice of crop has been taken from the Thun trigon for the period as close as possible to two days before a waning Moon. We are thus comparing a favourable Steiner planting time to a favourable Thun planting time during a waning Moon, considered to be a poor planting time according to Steiner.

This example of a how planting trials can be conducted in a simple way, by a large number of members of the Agricultural Section around the world could be conducted year after year, using a variety of crops. If one method is demonstrated to be more effective than another, it could then be compared with other possible approaches (apogee – perigee cycles, for example), with the hope of refining and finding consensus as to the best time to sow using the biodynamic method. As a final comment, it should be borne in mind, even though a research-based calendar with scientific consensus should be an obtainable goal, Steiner also spoke of the importance of meditation and observation when it came to best agricultural practice. The spiritual force inherent in nitrogen has the ability to communicate spiritually with us. Steiner states: “And this nitrogen is a very clever fellow! He will inform you of what Mercury and Venus and all the rest are doing. He knows it all, he really senses it. ...It is not at all a bad thing if he who has farming to do can meditate. He thereby makes himself receptive to the revelations of nitrogen. ... We suddenly begin to *know* all kinds of things, all kinds of things emerge. All kinds of secrets that prevail in farm and farmyard – we suddenly begin to know them” (p. 51). This is the esoteric element of biodynamic farming, and serves as the foundation upon which all Anthroposophical agricultural practice stands. If this is carried by all practitioners of biodynamic agriculture, then the biodynamic method will take its rightful place in the world, and will act as an effective force of good to counteract all of the threats that are gaining strength in the modern world of agriculture.

I would appreciate any comments and thoughts that members of the Agricultural Section have regarding the content of this essay.

Warmest Regards,

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