

CREATOR

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THE SEEDS OF GOD'S GLORY

*The earth brought forth vegetation,
plants yielding seed after their kind,
and trees bearing fruit with seed in them,
after their kind; and God saw that it was good
(Genesis 1:12).*

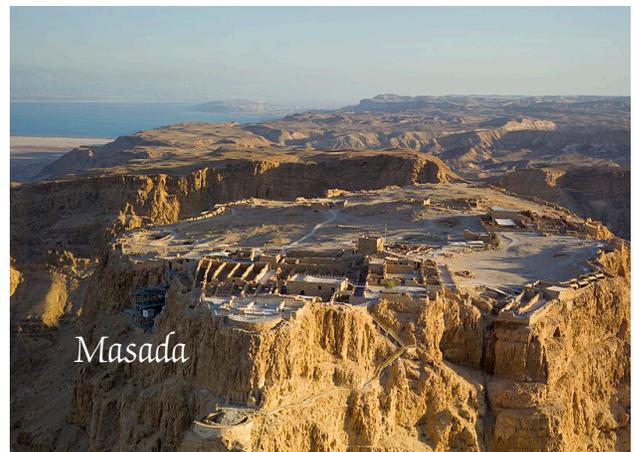
Before their eyes lay a small clay jar dating back to the reign of Herod the Great (37 B.C. – 4 B.C.). The jar's intact condition seemed unusual amid the collapsed buildings and archeological debris, but it's what the explorers found inside that proved extraordinary. The year was 1963 and this group of archeologists were combing the ruins of one of the most famous sites in the Middle East—Masada, a high stone fortress located in a remote region of southern Israel.

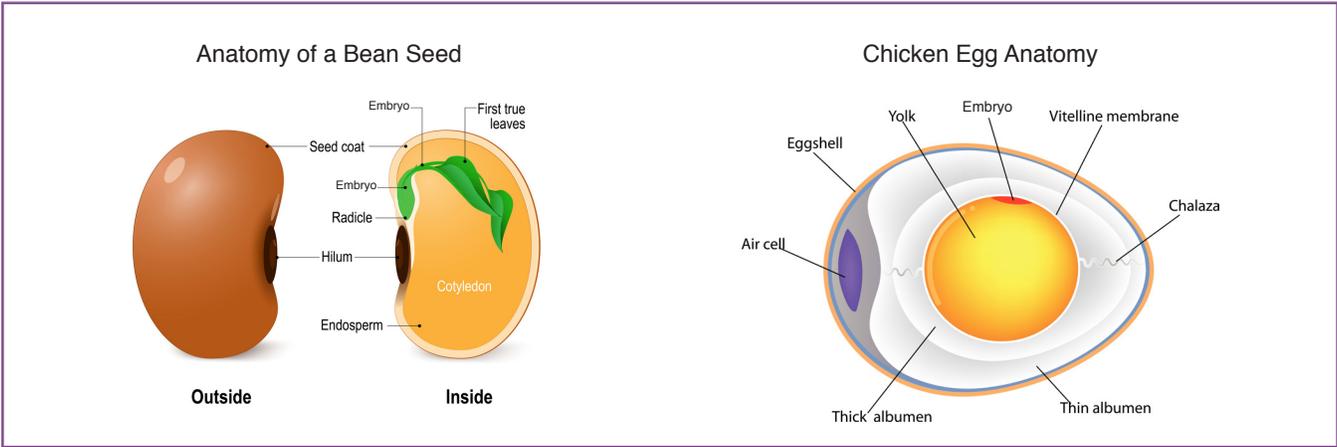
Originally built by Herod the Great, the Masada complex became the scene of a terrible tragedy. Jerusalem had been destroyed by foreigners in 70 A.D. and several hundred Jewish rebels found sanctuary in the fortress. The fort was eventually captured by the Roman army in 73 A.D., but not before 960 Jewish citizens burned its buildings and took their own lives rather than become slaves of Rome.

What the astonished archeologists discovered inside the clay jar were several untouched, two-thousand-year-old Jordanian palm tree seeds. This rare find was transported to the Bar-Ilan University in Tel-Aviv where they remained in wait for another 40 years.

In 2005, three of the ancient date palm seeds were planted and to everyone's surprise, one of them sprouted! The plant that grew was eventually given the name Methuselah after the oldest man that ever lived (Genesis 5:27). The male palm is now over 10 feet (3 meters) tall and thriving.

This is the oldest documented account of seed survival and a testimony to the greatness of our Living God who can quite literally perform the impossible. Most store-bought seeds lose their viability within two or three years, so how did the Lord do it?





SEED BASICS

*But God gives it a body just as He wished,
and to each of the seeds a body of its own
(1 Corinthians 15:38).*

All seeds have the same basic design. We might think of a seed as the “egg” of a green plant. A seed and a typical animal egg both possess an embryo, stored food, and a protective covering, which in the case of a plant is the seed coat. The types of nutrients that the parent plant stores in its seeds varies between species, and can include carbohydrates, proteins, fats and oils.¹

Our Creator Jesus established two large groups of seed-bearing plants: flowering plants or *angiosperms*, and *gymnosperms*—which include conifers, the ginkgo tree, and cycads. The seeds of flowering plants are found in sweet packages called fruits. Gymnosperm seeds are usually contained in woody structures, which includes the common pine cone.

God fashioned seeds in many shapes and sizes, further demonstrating His infinite creativity. There are 369,000 different kinds of flowering plants worldwide, each with its own unique seed type. They can vary from the dust-like orchid seeds (each weighing one

millionth of a gram)² to the seeds of the double coconut (*Lodoicea maldivica*), which can weigh up to 55 pounds (25 kg).

The number of seeds each plant produces also varies greatly. A healthy avocado tree averages about 150 fruits in a season, with each fruit containing one seed. A single, wispy grass plant may yield 1,000 seeds. And it’s been estimated that a California redwood can release from one to ten billion (yes, *billion*) seeds over its lifetime!

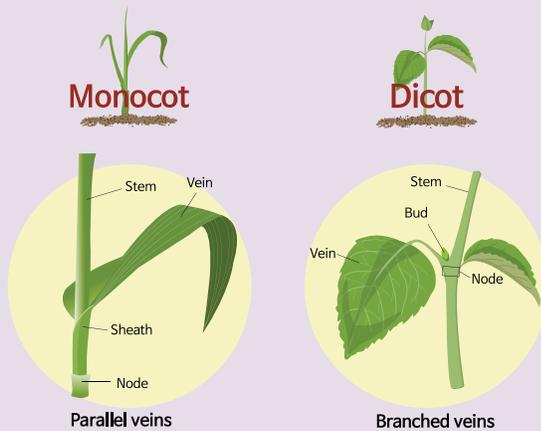


¹ An almond, for instance, typically is 20% protein, 20% carbohydrates, 50% fat, and 10% fiber.

² A small paper clip weighs about one gram.

For the Extra Curious

Monocot and Dicot leaves



The seeds of flowering plants can be divided into two additional categories: monocots (monocotyledons) and dicots (dicotyledons). The anatomy of monocot and dicot plants differ from each other. Monocots possess leaves with parallel veins and flower petals in multiples of three (e.g., 3, 6 or 9 petals). Dicot flowers usually have four or five petals (or some multiple of those numbers) and leaves with complex, branching vein patterns. It's usually difficult to distinguish the fruit of monocots from their seeds, which include the grains of rice, wheat, barley, and rye. The fruit of most trees and bushes—such as apple, peach, pear, mango, etc.—are produced by dicots. Beans, peas, and nuts also come from dicot plants.

It's fascinating to note that plants grown under stressful conditions (poor soil, less than ideal rain) will typically produce fewer seeds, but each seed will be of normal weight. This led ancient people to apply certain seeds as a standard of weight. Up until 1900, it was not uncommon for apothecaries (pharmacists) to measure out medicine using kernels of

wheat or barley as a reference. The weight of a drug was thus dispensed in “grains.” The carob seed (from the carob tree, *Ceratonia siliqua*) was also used by jewelers to weigh gem stones. This is how the “carat” became a standard of measurement. The word carat is derived from the Greek *keration*, which means “carob seed.”



Carob seeds

DORMANCY

Truly, truly, I say to you, unless a grain of wheat falls into the earth and dies, it remains alone; but if it dies, it bears much fruit (John 12:24).

How could the embryo of a seed survive for 2,000 years? When a baby starts life inside his or her mother, he or she continues to grow throughout pregnancy and into adult life. The same is true for the young of animals. Not so with seeds.



Evening Primrose
Oenothera biennis



Our Lord Jesus gifted almost all seeds with the ability to enter *dormancy*—a period of time when the embryo stops growing and experiences “suspended animation.” Its metabolic activity comes to a halt. If this were to occur in any other organism it would be considered dead! The heart rate of a hibernating ground squirrel may decrease to little more than two or three beats per minute (normally 300/minute), but its metabolism continues. It seems that the metabolism of a dormant seed ceases altogether.

This leads us to ask why God programs dormancy into seeds in the first place. In His incredible kindness, our sweet Lord Jesus causes seeds to remain inactive until conditions are right for the young plants to grow. Seeds found in the rainforest usually experience dormancy for only a matter of hours or days because there is ample moisture and warmth there. Plants in arid regions, on the other hand, produce seeds that may remain dormant for years, depending on rainfall; this increases their chances of survival. It’s not uncommon for some desert seeds to be inactive until chemicals in their seed coat are leached out

and washed away by abundant rainwater.

The exact length of time a seed can stay dormant depends upon the species of plant and environmental conditions—all sovereignly determined by God. The seeds of willows, orchids, and tea plants remain in a dormant state just a matter of days before they either germinate or lose viability. Most seeds, however, can remain viable for months or years if stored at low temperatures and kept dry. As we have seen, sometimes seeds survive for a considerable length of time. A Michigan agricultural experiment begun in 1879 demonstrated that the seeds of an evening primrose flower (*Oenothera biennis*) can germinate after 80 years.

DISPERSAL

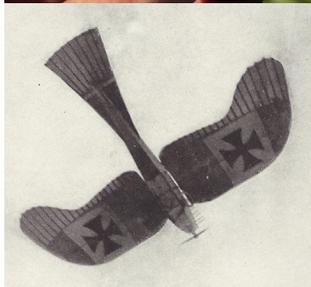
“The Amen, the faithful and true Witness, the [Source]³ of the creation of God” (Revelation 3:14).

As God, our Lord Jesus is the Source of all life and we can be certain that His glory and the glory of the Trinity are radiantly displayed throughout His creation (Psalm 46:10; Isaiah 6:3). From the beginning of time, God made plants—as He did people (Genesis 1:28)—to be fruitful (Genesis 1:11-13). It should thus be no surprise that Christ Jesus gave green plants numerous ways to spread their seeds around the world.

One of the most common means that our Lord uses to transport seeds from one place to another is *the wind*. Most everyone is familiar with the tiny “parachutes” released by dandelions that have gone to seed. So efficient is this distribution of their kind, that dandelions can now be found growing in London, New York, Tokyo, Beijing, Moscow, and Cape Town . . . to the chagrin of many.

³ The Greek word *archē* (ἀρχή) is usually translated “Beginning,” but can be rendered “Cause,” “Origin,” or “Source.” Colossians 1:16-17 and Revelation 21:6; 22:13 also teach that creation originated from Christ, as it did with His Father.

Other aerial seeds include those from maple, ash, elm, horn beam, and sycamore trees. Jesus applied His greatest aeronautical seed design, however, to the Javan cucumber (*Alsomitra macrocarpa*). Christ's construction of this delicate, five-inch (13 cm) seed is so precise and finely tuned that it can correct its flight pattern if buffeted by cross winds (passive stability), and it descends as little



The Taube

B-2 Stealth Bomber



as one foot (0.3 meters) in altitude for every second in the air (shallow angle of descent). Its design is so ingenious that flight engineers have been copying it for over 100 years! ⁴

Another common way for our Lord to disperse seeds is *by animals*—mammals, birds, tortoises, fish, and insects. An animal distributes seeds by either external or internal means. In the fall, it is not uncommon for mice, woodpeckers, and

⁴ Austrian Igo Etrich was the first to adapt the seed's design to his own creation, the Taube (above).

harvester ants to create caches of abundant seeds. Although many of these gathered seeds are eaten during long winter months, some are forgotten and end up germinating in the places where they are hidden.

God also fashioned numerous seeds with a seed coat possessing burrs, hooks or spikes that can easily attach to the fur of a passing animal (or the socks of an unwary hiker). Most of these seeds detach within a week, but some may remain in an animal's fur for up to two months. ⁵

Burrs



Christ Jesus also packaged the seeds of several plant species in delicious fruits, which are commonly eaten. Fruit seeds, such as the apple, usually possess a tough seed coat that resists digestive acids and enzymes. These internally-transported seeds are then deposited far and wide . . . and with their own fertilizer.



Possibly the most exciting way God spreads seeds is when they are *forcefully released* from the parent plant. The squirting

⁵ It's been discovered that the burrs of different species of plants were designed by the Lord to be carried by the fur of specific animals.

cucumber of the Mediterranean can spew its seeds outward for a distance of 20 feet (6 m). Not to be outdone, the “dynamite tree” in South America literally shoots its seeds from the parent plant at a velocity up to 155 mph (250 km/h) and a distance of 150 feet (45 m)! This prevents young saplings from competing with well established trees. Other plants that use “explosives” in seed dispersal include witch hazel, garbanzo beans, vetches, Mexican poppies, and dwarf mistletoes.

GERMINATION

And others fell on the good soil and yielded a crop, some a hundredfold, some sixty, and some thirty (Matthew 13:8).

In the thirteenth chapter of Matthew, our Lord Jesus asks us to consider some of the factors that either prevent or encourage seed growth. Though He is speaking of spiritual and eternal things, it is instructive for us to probe deeply into the amazing event

known as *germination*, and discover what it might teach us about physical and spiritual realities.

The series of chemical changes that must take place within the seed as it comes to life is exceedingly complex and poorly understood by botanists. Each species of seed has been encoded by the Master Programmer to respond to a unique set of environmental conditions. The most common external factors that mysteriously trigger germination involve light (including the angle and frequency of light hitting the seed), water, temperature, and oxygen. Some seeds—usually the smallest ones—buried deep within the ground will not germinate until they are brought to the surface and exposed to adequate light and oxygen. Larger seeds, on the other hand, can begin growing even in the dark because they have more energy reserves.

Many varieties of seed will germinate only after they have been given adequate moisture *and* exposed to cold temperatures (32° F or 0° C) for several weeks. This prevents seeds produced in autumn from germinating until the next spring.



Still more amazing are seeds that our Lord Jesus has fashioned that must experience smoke or extreme heat in order to grow. Yellow whispering bells (*Emmenanthe penduliflora*) germinate only after nitrogen dioxide (NO₂) in smoke has invaded the seed coat. And the seeds of certain acacias, chamise, sumac, rock-rose, and buckthorn cannot absorb (imbibe) water until their hard seed coats have been damaged by fire.



Yellow whispering bells
Emmenanthe penduliflora

Many kinds of desert seeds possess special chemicals in their seed coats that inhibit germination. As we mentioned earlier, these seeds will not spring to life unless the inhibitors are washed or leached away by abundant rainwater. These chemicals prevent a desert plant from beginning life after only a brief sprinkle. This is also true of the cacao bean, from which we get chocolate. God placed caffeine in its seed coat to inhibit germination until there is enough water to remove this chemical and support plant growth.

Finally, our Lord created some seeds that will not germinate unless their seed coats are first nicked or exposed to acid.⁶ Thus, the seeds of apples, pears, citrus, and tomatoes will not begin to grow while still inside their fruit. If these fruits are eaten, the digestive acids of an animal provide the perfect “chemical treatment” to allow for germination once the seeds are excreted.

Our Lord Jesus designed seeds to recognize optimal growing conditions. When these become available, the germinating seed will send down a tiny root and thrust a shoot upward, which almost immediately produces leaves. A seed’s job is finished once its food supply is used up.

SEED ECOLOGY

*You send forth Your Spirit, they are created;
And You renew the face of the ground
(Psalm 104:30).*

It’s impossible to grasp the nature of an ecosystem—any ecosystem—without considering the many varieties of seed our Creator God faithfully sows within it. This is as much a part of His display of Triune glory as anything in nature.⁷

The number of seeds that a green plant produces far exceeds the number that germinate. Most seeds are eaten by animals, providing much needed protein, carbohydrates, and oils to these creatures. In this way, seeds clearly demonstrate Christ’s tender and faithful care for His creation.

A sufficient quantity of seeds, especially the smallest ones, find their way into the soil and remain dormant there for years, often decades, as long as they stay buried. Scientists refer to these viable, buried seeds

⁶ Known as scarification

⁷ Read about how ecosystems display the glory of the Trinity in **CREATOR** Volume 19 Number 2.

as an ecosystem’s “seed bank.” Natural seed banks are a vital way that God’s Spirit ensures the survival of plants for future generations. A forest floor may contain as many as 1,000 seeds in one square yard of soil (one meter square), while grasslands have been known to store up to a million seeds in the same amount of space! If an environment experiences drought, fire, or flood—destroying above ground vegetation—the bank of buried seeds can then be used by our Lord to repopulate an ecosystem with native plants.

In the past 60 years, people from around the world have come to realize the importance of seed preservation, and many countries have developed man-made seed banks housed in environmentally controlled buildings. The United States has a national seed bank located on the campus of Colorado State University in Fort Collins, Colorado. This bank stores more than 850,000 varieties of seed from all over the world. Similar sites



have been created in England, Taiwan, Australia, and India. Collectively, these seed storage sites (now over 1,000 worldwide) are a vital resource for regions of the world

that experience crop failures due to disease, drought, or some other catastrophe. Seed banks, like the one in Taiwan, are also trying to breed plants that can be used in poorer countries where crop cultivation has been difficult. Still other facilities are saving the seeds of endangered species. In 2008, Norway built a huge facility in the side of a mountain located on the island of Spitsbergen within the Arctic Circle. Considered a world seed bank, the facility is able to house more than two billion seed types.

Although God is the Author of all disasters (Amos 3:6)—and we often see only the dark side of these calamities—it’s also common for Him to share His glory through such tragedies. In early September 1666, the central portion of London caught fire, burning thousands of buildings and homes. During the following spring, the Holy Spirit brought to life a bloom of countless wildflowers that carpeted the charred earth far and wide with God’s beauty. It is thought that the seeds of these plants had been buried in the ground before much of the city was built, hidden away in a seed bank known only to our Creator. Sometimes tragedy must take place for God’s goodness and glory to be seen!

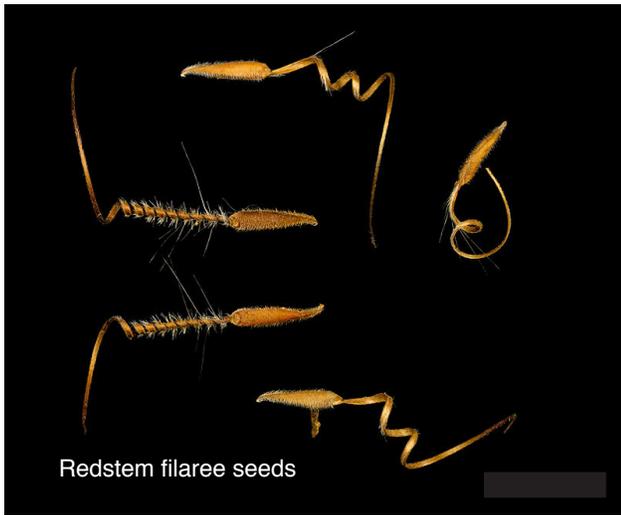
SEEDS IN DAILY LIFE

Oh, the depth of the riches both of the wisdom and knowledge of God (Romans 11:33b)!

Given that our Lord Jesus fashioned 369,000 different kinds of seeds, the sheer volume of fascinating facts concerning them seems almost endless. We have time to highlight only a few of the many other amazing things we have discovered:

- God made a plant known as redstem filaree (*Erodium cicutarium*) that has seeds





Redstem filaree seeds

with the unusual ability to drill themselves into the ground. Each seed acts like a self-propelled corkscrew in response to changes in humidity.

- Physicists have calculated that some germinating seeds can exert a force up to 450 pounds per square inch (31 kg/cm²), enough to split open a large boulder.

- Some desert seeds must be exposed to high temperatures (often in excess of 122° F or 50° C) to break dormancy. These seeds will then be ready to germinate in the fall when weather is more favorable.

- There is only one species of Ginkgo tree. Its name is derived from Chinese words meaning “silver apricot.” Female trees produce seeds that look like plums and that many people find repulsive. There was a Ginkgo tree on our university campus. Each fall it would drop its fruit, which would subsequently get trampled underfoot by students. The crushed seeds emanated a most disgusting odor similar to vomit. Interestingly enough, people in China and Korea consider these seeds a delicacy.

- The seeds of many fruit trees contain poisons. It has been known for quite some time that apple seeds and apricot pits contain cyanide.

- One half of all the calories consumed by people worldwide come from grains—the seeds of various grasses.

Castor beans and oil



- The oil of castor beans has the unusual property of maintaining its viscosity even at high temperatures. It is for this reason that castor seed oil has been used in race car engines (originally marketed as Castrol).

- Castor beans also contain one of the deadliest poisons found in nature, ricin. Ricin is a storage protein that in its purified form is 500 times more toxic than arsenic.



Ginkgo seeds



• Using wild seeds, people living in the mountains of Kazakhstan were the first to domesticate apples.

• The strawberry is an unusual fruit because God places its seeds on the outside.



• Velcro was invented by George de Mestral in 1941 after investigating why burr seeds remained stuck in his dog's fur.

SEEDS OF TRUTH

For you have been born again not of seed which is perishable but imperishable, that is, through the living and enduring word of God (1 Peter 1:23).

If we think of a seed as a vehicle for God's praise—because it displays His character in a special way when it becomes a grown plant—then consider how many ways this can happen. There are 369,000 different kinds of seeds.⁸ God's message in this is clear: Using the seeds Christ crafted, He has sown into the world an abundance of His glory and majesty (Isaiah 6:3). Please allow me to urge us all to pay greater attention to what God is

⁸ This number does not include the hundreds of seed types produced by gymnosperms.

doing here on Earth. In past issues, we have spoken of the Queen Anne's lace and how it reveals the glory of the Lamb of God,⁹ yet *all plants* tell us something profound about our Lord.

We find God's desire to spread His own glory in the parable of the talents (Matthew 25:14-30). Each of the talents in this account could be likened to spiritual seed. Our Lord freely gives the world and everyone in it a knowledge of His character (Romans 1:20). We are thus responsible before God to multiply the proclamation of His majesty through our lives, just as fertile ground faithfully produces abundant fruit. Those in the world who ignore these "seeds" of Christ's righteousness are like the wicked, lazy slave who dug a hole and threw his talent into the ground, covering it with a great amount of dirt. We know from our present study that if a seed is buried too deeply, it will not sprout, though it may remain viable for some time.

If we love Christ, and obey His Word, our hearts will become a beautiful rock garden . . . a cherished, secret place known only to God. Our Heavenly Father subsequently sows the seeds of His Son's glory into our lives.



⁹ Read **CREATOR** Volume 5 Number 3.



And if we continue to fix our eyes on Jesus (Hebrews 12:2), the Sun of Righteousness, His Spirit will cause these seeds to germinate within us and produce fruit—a visible display of His character (Song of Solomon 4:12-5:1; Ephesians 2:10). This choice fruit includes Christ's faithfulness, love, humility, obedience, kindness, tenderness, justice, holiness, power and wisdom, and every other fragrant aroma of His wonderful and beautiful character (Galatians 5:22-23; 2 Corinthians 2:14-17).

A parallel to the parable of the talents is Christ's parable of the soils (Matthew 13). Our hearts by nature are wicked and hard, distracted by the things of this world (Jeremiah 17:9). Like the wicked slave who buried his talent deep in the dirt, we will not produce the fruit of Christ's glory and excellencies in our lives *on our own*. Only the Holy Spirit can make our hearts fertile ground (John 3:5-8). But if we have been renewed by God's Spirit, we must then be alert and eager to receive the excellencies of Christ's character displayed in all His revelations of Himself (His creation, His Word, His providence). If we love Jesus above all else—and He is so lovely!—Christ's Father will carefully and tenderly plant

His Son's glory into our hearts and lives. We can then prayerfully ask God to cause these excellencies to bloom and bear fruit (Galatians 5:22-23). Many in the Church today receive these precious seeds through the faithful preaching of God's Word, but then bury them deep in the back of their minds, quickly forgetting them in the activities of the following week. Sadly, these seeds of righteousness never sprout or bloom.

We are also commanded to freely, but carefully sow in abundance the seeds of our Triune God's glory (Isaiah 61:11). In His Word, God speaks of the world as a harvest. He uses laborers to spread these spiritual seeds, which includes the proclamation of the Gospel and the planting of churches throughout the world. Believers should seek to sow seeds into the lives of those who the Lord places along their paths. This is the purpose of Gospel preaching and the faithful proclamation of God's glory and character. The greatest crop that can ever be had is when the seed of God's Word is nourished by His Spirit in the soil of someone's heart producing a harvest of true belief and obedience to God's Son. Oh, what joy!

Is Christ and His glory precious to you? Please allow the seed of His Word to do



its work within you. Dirt that has nothing planted in it remains barren. Jesus died on a cross to save His own from their sins and the wrath of Almighty God (Matthew 1:21; 1 Thessalonians 1:10). He died to give us the seed of His life—do you believe this? Like a wheat plant that pours its energy into its grain so that life might form in another generation, so Jesus has given His all for His people. Please repent of your sins and put your full trust in Christ. *He is trustworthy.*

*For as the earth brings forth its sprouts,
And as a garden causes the things
sown in it to spring up,
So the LORD God will cause righteousness and praise
To spring up before all the nations (Isaiah 61:11).*



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