



MATZAH FOR ALL: THE SUGYA AND SAGA OF OAT MATZOS



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Much has been written about the relatively recent innovation of matzah made from oats. The value of publishing another treatment on the topic is twofold: to provide current information, and also to maintain an awareness that oat matzos are not simply another, albeit more expensive, variety available to consumers. Rather, they are a niche product intended for a specific demographic group. To a lesser extent, some of the issues may apply to spelt matzos as well.

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Also, the article can be viewed in the Passover section of STAR-K's website, at <https://www.star-k.org/passover>.

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יה"ר שנקיים "על-מצות ומררים יאכלהו" בשמחה ובששון במהרה בימנו.

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Five Grains: Four Plus Oats

Producing matzah fit for the mitzvah entails baking dough that is comprised of any of the Five Grains: wheat, barley, spelt, rye or oats (*Mishnah Pesachim* 2:5).¹ Ramo (453:1) records the minhag is ideally to make matzah only from wheat. Reasons for the minhag are because wheat is generally more enjoyable and thereby a 'hiddur mitzvah' (*Mishnah Berurah* from *Chok Yaakov*), or because the structure of a wheat kernel is hardier than the other grains, thus prolonging the time it takes before becoming chametz (*Tiferes Yisroel, Pesachim* 2:5).²

Almost sixty years ago, there was a challenge to identifying *shiboles shu'al* (שִׁבּוֹלֵשׁ שׁוּ'אֵל), the last of the Five Grains, as oats.³ Nonetheless, the consensus of *Poskim* has been and firmly remains that oats are on the list.⁴

¹ Other halachos affected by being classified among the Five Grains are: the ability to become chametz, *hafroschas challah*, *brochah rishonah* and *acharonah*, *chodosh*, and *bikurim*.

² Another connection between wheat and matzah is found elsewhere in Ramo (475:7) who describes a now defunct custom of baking matzah in a way that is reminiscent of *Lachmei Todah*, which were baked from wheat. On the level of *machshavah*, a linkage between wheat and matzah can be developed following the position of R' Yehuda (*Brachos* 40a) that the *Eitz HaDaas* was wheat and, on some level, eating matzah is a rectification of that primordial sin.

³ Professor Yehudah Felix (d. 5765/2005), whose works on flora and fauna in the Mishnah were respected by *Gedolei Yisroel*, objected to identifying *shiboles shu'al* as oats, primarily on grounds that the historical agricultural record indicates oats (and rye) were not cultivated in the region of Eretz Yisroel during times of Chazal. Therefore, he gave weight to another identification offered by the Aruch, also a Rishon, as more authentic. (Similarly, he argued that תמכא in the Mishnah cannot be *chrein*, horseradish, since that too did not exist in Mishnaic Eretz Yisroel.) See article by Rav Shmuel Meir Katz, Chaver Beis Din for Kof-K Kosher Supervision, in Kof-K's journal *Food For Thought*, Pesach 5773.

⁴ Rav Shlomo Zalman Auerbach (*Halichos Shlomo*, Pesach, chap. 9, note 326) concerning both oats and *chrein*, emphasizes that our *masorah* is the final determinant for halachic application, not scientific investigation. Many cite Rav Elyashiv and Rav Moshe Feinstein as also being adamant in this regard. Likewise, Rav Yoshe Ber Soloveitchik (*Nefesh HoRav* p.53, *MiPeninei HoRav* p. 69) was steadfast in his family's understanding of the position articulated by his great-grandfather, the *Bais HaLevi*, that establishing the identity of a species for

Our *masorah* follows the earliest *Chachmei Ashkenaz*, Rabbeinu Gershom and Rashi (Pesachim 35a and Menachos 70a), who translate *shiboles shu'al* as *avoine* (אב״ינ"א), which means oats in French and other Romance languages.

Inside the hull of a grain kernel are three sections: bran (thin outer layer), germ (small, nutrient-rich part), and endosperm (bulk of the kernel, source of white flour). The endosperm contains gluten, a water-insoluble protein, which performs a dual role. When a kernel germinates for further reproduction, gluten nourishes the growing stalk; when a kernel is ground into flour and made into dough, gluten (the Latin word for glue) provides a sticky and elastic texture which prevents carbon dioxide gasses emitted by the fermenting grain sugars from escaping. This allows dough to rise and gives bread its fluffy texture.

Among the Five Grains, oats are an outlier since, unlike the other four, oats do not contain gluten⁵. In place of gluten, oats have a different water-insoluble protein called avenin. Compared to wheat flour where gluten comprises up to 85% of protein content, the concentration of avenin in oat flour protein is only about 15%.⁶ Therefore, when dough made from oat flour is left to ferment there is little to trap gas bubbles inside, resulting in bread that is much denser and crumblier than bread made from the other grains. Evidently, our *masorah* regards this weakened and more subtle form of leavening by oats as sufficient to be considered chametz. In contrast, other types of flour, such as rice or corn, when mixed with water,

mitzvah fulfillment (e.g. Five Grains for matzoh, *chilazon* for producing *techeiles*) can only be accomplished through *masorah* and not reconstituted by scientific methods. Cf. Rambam, Mishnah Torah, *Hil. Shemittah v'Yovel* 10:6, “שהקבלה והמעשה עמודים גדולים בהוראה ובהן ראוי להתלות.” See also *Masorah Journal*, vol. 13; *Torah, Chazal and Science*, by Rav Moshe Meiselman, p.156.

Interestingly, Rav Sternbuch, in *Teshuvos v'Hanhagos* I:302, countenances the possibility that the status of oats among the Five Grains is a *safek*. However, seventeen years later, in V:130, he discounts the notion entirely. It seems that the record of Poskim who were initially *choshesh* for Prof. Felix's assertion, *lechumrah*, before later dismissing it, has been redacted from the literature.

⁵ While oats do not naturally contain gluten, they are often tainted with gluten due to cross-contamination from other grains during growing and processing.

⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5635790/>

reach a state of *sirchon*, spoilage, but never become chametz (*Pesachim* 35a).⁷

Celiac and Gluten

Celiac disease, where the lining of the small intestine is damaged and prevents the body from absorbing vital nutrients, was first described 1900 years ago by the Greek physician Aretaeus. It was linked with grain consumption during World War II by a Dutch pediatrician who observed how symptoms were relieved when sufferers avoided products made with wheat flour. In the 1950s, gluten specifically was identified as the component which triggers adverse effects.⁸ Further studies concluded that celiac is a hereditary autoimmune disorder, where gluten provokes the immune system to attack the person's own body.⁹

About 1% of the population, on average, is affected by celiac disease, with a slightly higher-than-average prevalence among Jews.¹⁰ The condition may progress to the point where even trace amounts of gluten can be dangerous. Research is still ongoing into whether Non-Celiac Gluten Sensitivity exists, inducing symptoms in people without genetic markers. Those who feel their digestive health is impacted by gluten try to maintain intake levels below certain thresholds but do not take measures to avoid it entirely.

Spiritual Gain vs. Physical Pain

How does this impact the mitzvah of matzah? Standard *shmurah* matzos today are produced from a wheat variety called 'soft red winter'.¹¹ 'Hard' and 'soft' refer to kernel texture and reflect gluten content. Hard wheat

⁷ See *Torah, Chazal and Science* which notes the confidence *Chazal* had to state definitively that only the Five Grains become chametz. They were unequivocal that another grain fitting this description could never be discovered in the future.

⁸ Wheat gluten is composed of gliadin and glutenin proteins in approximately equal proportion. The amino acid sequences within the gliadin proteins are responsible for the celiac reaction, <https://en.wikipedia.org/wiki/Gliadin>.

⁹ Celiac, an inborn immune disorder, is not the same as wheat allergy, where the body produces antibodies to fight proteins in wheat. People with wheat allergy may consume other grains, even those with gluten.

¹⁰ <https://celiac.org/main/wp-content/uploads/2016/06/ethnicitymanuscriptproofs.pdf>

¹¹ Winter wheat is planted in fall and harvested in late spring / early summer. This is why matzah generally avoids the prohibition of *chodosh*.

contains more gluten than soft wheat, making it ideal for breads and pastries. Soft wheat is better for crumbly items like pretzels, crackers, and matzah. (In actual practice, manufacturers use wheat blends to ensure uniform results.) Even though soft wheat has a lower gluten level, someone with actual celiac disease may still find it difficult to tolerate.

Generally, whenever there is a chance of dangerous consequences to one's vital health, he is exempt from mitzvah obligations - אָנוּס רַחֲמָנָא פְּטָרֵיהּ. Performing a positive mitzvah in a way that poses risk to life is actually an *aveirah*, a transgression. Maharam Shick (O.Ch. 260) rules that one who chooses to perform the mitzvah and endanger himself has no license to make a *brachah*. However, when doing a *mitzvah* would only cause discomfort or temporary illness without long-term repercussions, the *halachah* is less defined.

Regarding the requirement to drink four cups of wine at the Seder, Shulchan Aruch (472:10) states:

מי שאינו שותה יין מפני שמזיקו או שונאו צריך לדחוק עצמו ולשתות לקיים מצות ארבעה כוסות

One who does not drink wine because it harms him or because he dislikes it must still push himself and drink to fulfill the mitzvah of Four Cups.

The source for this ruling is the Talmud (*Bavli, Nedarim 49a; Yerushalmi, Pesachim 10:1*) which cites Amoraim who would drink wine at the Seder even though it caused them headaches for months afterwards. *Poskim* (see *Mishnah Berurah* and *Kaf HaChaim*) note one must exert himself only if he will still continue to function, albeit with discomfort. However, if he will be rendered immobile, i.e., confined to bed, then there is no obligation for one to drink wine.¹²

¹² When these *halachos* were formulated, grape juice was not available during Pesach. In the Talmud, grape juice appears in the context of squeezing grapes and drinking it immediately thereafter (*Bava Basra 97b*). Before the advent of refrigeration and pasteurization, grapes (the fruit or its juice) – which are harvested in fall – would spoil long before spring, unless fermented and preserved as wine. Not until the late 19th century was grape juice available commercially. Kosher grape juice production began in the 1920s, during Prohibition, marketed as “Kosher Unfermented Wine”. Although *Poskim* permit using grape juice for *daled kosos* when necessary, fulfilling the ‘*derech cheirus*’ component of the

Kaf HaChaim extends this halachic distinction to eating matzah as well. Someone who will experience discomfort must still eat the minimal amount for *motzei matzah* and *afikomon*, but someone who will become immobilized is exempt.

Mishnah Berurah, on the other hand, appears to disagree with this extension. He too distinguishes between discomfort and immobilization with regard to *daled kosos*. But in *Shaar HaTziyon* he adds the reason for the exemption when becoming bedridden is because one must drink wine at the Seder “*derech cheirus*”, in a matter of freedom, which is contravened when it causes severe illness. This implies that all other *mitzvos*, which are not limited by “*derech cheirus*”, e.g., matzah, must be performed even to the point of illness – provided there is no prospect of danger to life.

This is indeed the position of *Maharam Shick* (*ibid.*) that one must eat matzah (and marror) even if it may cause illness, so long there is no chance of risk to life.¹³ He does not make this point, but it’s reasonable to assume that even *Maharam Shick* agrees there is no obligation to perform a mitzvah if it will result in lifelong bodily malfunction. The prooftext for this halachah is the Amoraim who drank wine despite becoming ill for a few months, but not indefinitely.

Later *Poskim* explain the *Mishnah Berurah* too can agree with *Kaf HaChaim* (and against *Maharam Shick*), that one is not obligated to become severely ill, even temporarily, for a mitzvah. Why then does he mention the reason of “*derech cheirus*” which is unique to *daled kosos*, implying that other mitzvos do not share this exemption? Various approaches are offered:

mitzvah requires some alcoholic content. One may minimize the amount of wine to drink by: 1) only drinking a majority of the *revi'is/kos*, and not the entire cup, 2) diluting the wine. Rav Moshe Heinemann holds that the resultant mixture should contain at least 4% alcohol. Therefore, wine which has 12% alcohol content can be diluted to 1/3 wine and 2/3 water. See STAR-K’s annual Pesach Guide for further details.

¹³ Maharam Shick writes the halachah of drinking *daled kosos* despite severe side effects applies “*kol shekain*” (כל שכין) to eating matzah and marror. Matzah is understood since it’s a *mitzvah d’oraissa*. Why there is a *kol shekain* to marror is unclear.

1) *Daled kosos* belongs to a category of mitzvos established for *pirsum haNeis*, publicizing the miracle (along with reading Megillas Esther on Purim and lighting the menorah on Chanukah). These mitzvos, although Rabbinic, require one to stretch himself beyond normal halachic limits.¹⁴ For example, while one usually does not need to spend more than one-fifth of his assets to perform a mitzvah, for mitzvos involving *pirsum haNeis* one must sell all his possessions. Therefore, it's conceivable that *daled kosos* is stricter than other mitzvos in this aspect too, obligating one to undertake a chance of becoming bedridden or contracting long-term illness (that is not life threatening) for the sake of the mitzvah. However, since that would not be considered drinking *derech cheirus* there is no such obligation.¹⁵ But other mitzvos, like eating matzah, that are bound by the normal limit of not spending more than one-fifth would likewise be limited by the amount of discomfort one must endure to fulfill the mitzvah.

2) Even though one is not obligated to become bedridden for the sake of a positive mitzvah, one who extends himself to that degree has nevertheless fulfilled the mitzvah. An exception is *daled kosos*, since drinking *derech cheirus* is essential to the mitzvah. If drinking wine causes severe illness (as opposed to annoying pain, like a hangover) that is not "*derech cheirus*" and no mitzvah has been performed.¹⁶

The Solution: Oat Matzah

For many years, sufferers of celiac disease confronted these issues when it came to the mitzvah of matzah on Pesach. They would evaluate if ingesting matzah would merely cause manageable distress or more serious symptoms and seek halachic guidance accordingly. Mostly, they devoutly relied on the dictum of (קהלת ה:ה) – *שומר מצוה לא ידע דבר רע* – one who obeys mitzvos will not confront danger.¹⁷ "Is there another option?" is a question that was left unasked.

¹⁴ See Bais Medrash of Ranchleigh, *Kuntress L'maan Tesapier Pesach* 5781, page199.

¹⁵ See Rav Tzvi Pesach Frank, *Mikraei Kodesh*, Pesach II, *siman* 163; *Shu"t Minchas Asher* III, *simanim* 42-43.

¹⁶ See *Teshuvos v'Hanhagos* I:302

¹⁷ *Teshuvos v'Hanhagos*, *ibid*.

Almost forty years ago, in the mid-‘80s, Rabbi Ephraim Kestenbaum, a chemist from Golders Green in London, was prompted by his young daughter, who was diagnosed with celiac, to capitalize on the inclusion of oats in the list of Five Grains and solve the dilemma by creating gluten-free oat matzah. After much experimentation and perseverance working with the crumbly gluten-less dough, his endeavor yielded a product that became popular among the community of celiac sufferers. Other bakeries have since followed suit.

For reasons we shall see, these matzos are not for everyone. People who suspect they have gluten intolerance but not celiac, or who have a mild wheat allergy, should ideally consume a minimal *shiur* of wheat matzah. If necessary, they can eat only a bite for *motzi matzah* and save the requisite *k'zayis* for *afikoman*.¹⁸ Alternatively, they may use *shmurah* matzah made from spelt. Gluten found in spelt is a more delicate variety than the gluten in wheat and is more water soluble. Furthermore, spelt has higher fiber content than wheat, aiding its digestion.

Challenges of Oat Matzah

We have long-established traditions, evolved over thousands of years, in making matzah from wheat. Granted, the matzah we eat today is not identical to what was consumed centuries ago.¹⁹ But the methods of working with wheat flour are familiar, built upon ample precedent in the realms of both halachic theory and practice, minor discrepancies between communities notwithstanding. With respect to other grains, there is no such strong basis. In particular, baking matzah from oat flour poses special challenges.

After stalks are removed during harvest, the remaining whole oats are comprised of a protective hull, which goes for animal feed, and an inner

¹⁸ *Minchas Asher* III *siman* 43, explains that someone who limits matzah consumption at the Seder to just one *k'zayis* has consumed his *afikoman*, after which nothing else may be eaten. Therefore, the *k'zayis* should be saved for the end. Additionally, eating the *k'zayis* after partaking from the *seudah* fulfills the enhanced mitzvah of eating *al hasovah*, to do the mitzvah while already partially satiated. Cf. *Shulchan Aruch O.Ch.*, *siman* 482.

¹⁹ Our matzah today is much thinner and more rigid than what our ancestors used. See *Shu"t Minchas Asher* III, *siman* 64; *Hakirah* Journal vol. 17, "The Thick and Thin of the History of Matzah", by Ari Z Zivitofsky and Ari Greenspan.

groat, which is processed into human food. Oat groats contain a concentration of enzymes and lipids which become decompartmentalized during milling. Their interaction starts a reaction that eventually leads to a rancid aroma and bitter taste in a matter of days. Shelf stable oats are produced industrially by deactivating the enzymes in a process called kilning. This involves a long vertical cylinder where live steam is injected to raise the temperature of the groats, followed by radiant heat which evaporates excess moisture. Only then are the oats milled to various specifications.

The regular kilning process is not an option for Pesach as the steam will cause the oats to become chometz. Consequently, a different technique had to be developed specifically for producing oat matzah.

Rav Osher Westheim, Dayan of the Manchester Bais Din (*niftar* at the beginning of the Covid epidemic) was involved with the kashrus of oat matzah from the very beginning. In 5744/1984 he consulted with Rav Chanoch Dov Padwa of London (author of *Cheshev HaEifod*) to allow heating the groats with dry air blown through the cylinder. While not as effective as steam, it helps mitigate the bitterness somewhat. Rav Betzalel Rakow in Gateshead was also part of the discussion.

The following year, Rav Yitzchok Yaakov Weiss (author of *Minchas Yitzchok*, formerly chief Dayan in Manchester until 5730/1970 when he assumed the helm of *Eidah HaCharedis* in Yerushalayim), published a *teshuvah* prohibiting these oat matzos. After Rav Westheim met with Rav Weiss and discussed the matter, he partially retracted and allowed oat matzos for *cholim* (sick people) only, provided they were made in small batches and for personal use, not commercially.

Among the concerns is that the Five Grains are divided into different divisions, both for the purposes of *kilayim* - the prohibition of planting seeds of disparate species in proximity to one another (Mishnah *Kilayim* 1:1), and for determining which mixtures combine to form a dough large enough that obligates separation of *challah* (Mishnah *Challah* 4:2). Oats are considered a close relative of barley but not of wheat. Halachah regards barley as more susceptible to becoming chametz than wheat (*Pesachim* 40a, *Shulchan Aruch* 453:5) and oats should be treated with the same stringency. As such, the usual time allowance for wheat dough before it

enters the oven (known colloquially as ‘18 minutes’) may not apply to oats and a shorter time window is needed.

Additionally, the nature and consistency of oat flour necessitates making oat matzos thicker than the range of acceptable norm today. This raises the possibility that even though the outside of the matzah is baked, the inside is not done well enough to remove concerns of becoming chametz.²⁰

Absorbed Moisture

A decade later, in 5755/1995, Rav Westheim and his colleagues posed to Rav Shmuel HaLevi Vosner in Bnei Brak (author of *Shevet HaLevi* and grandfather of Rav Westheim’s son-in-law) additional halachic issues that they encountered regarding oat matzos.

One question concerned the considerable amount of *zeyyah*, moist vapor, emitted by the groats while being heated by the stream of forced hot air. Although the groats themselves emerge completely dry, perhaps we should be concerned that the kernels absorb some of the moisture in the chamber before steam escapes through vents. This moisture has the status of *mei peiros* (literally, fruit juice). Even according to the opinion that pure *mei peiros* does not cause grain to become chometz, nevertheless, when water is added to the mixture then grain becomes chometz very quickly. (*Shulchan Aruch* 462:1-2). Or maybe this case is better since the *mei peiros*

²⁰ This concern is not exclusive to oat matzos. For economic reasons, commercial matzah bakeries keep their ovens very hot, well over 1000°F. This enables matzos to be baked quickly, about 12 seconds per matzah, increasing the amount produced per shift. Rav Yosef Eliyahu Henkin (5641/1881-5733/1973; sefer *Lev Ivra*, p.40; *Teshuvos Ivra* p.20) cautioned that this results in a downside that the outer surfaces are baked (קרימת פנים), while the inner layer is still raw (חטי בצק) (נמשכין ממנו). Following his direction, some private *chaburos* insist on lowering the oven temperature. When Rav Heinemann supervises matzah baking, every single matzah is checked for this potential problem. A few minutes after being taken out of the oven, after it cools down a bit, a matzah should be hard and dry enough to “snap” when broken. Matzos still pliable at this stage are deemed ‘*vasser matzos*’ - too soft - and are rejected for STAR-K (although the bakery’s own *hashgochah* may accept them). Later, after the matzos are boxed, is too late to check since everything will harden by then. When matzos are rolled too thick the problem is even more common.

are first absorbed in grain and completely dried, and only subsequently is water introduced during kneading.

Bei'ur Halachah (beginning of *siman* 462) discusses this scenario and cites different viewpoints. Ultimately, he rules that in a *sha'as hadchak*, extenuating circumstance, when there is no other reasonable alternative, there is grounds to rule leniently when *mei peiros* are absorbed before the grain comes in contact with water. The question then is if this leniency, issued in reaction to a rare, unexpected situation, can be extended to allow producing oat matzos under these circumstances on a regular basis?

Defining Matzah: Chametz Arrested or Avoided?

Rav Westheim posed a second question to the *Shevet HaLevi* that he says was mentioned initially in discussions with his colleague and was raised again by a prominent American rabbi who felt it was a serious challenge to the production of oat matzah. We know this rabbi to be none other than Rav Moshe Heinemann, Kashrus Administrator of STAR-K Certification, and *Mara D'Asra* of Agudath Israel of Baltimore.

The question stems from the fact that applying heat to deactivate enzymes in the oats to prevent them from becoming rancid, at the same time, also prevents them from becoming **chametz**. The Gemara (*Pesachim* end of 39b, see Rashi) indicates, followed by Rambam (*Chometz U'Matzah* 3:3), that fully roasted grain kernels (*kilayos*, קְלִיּוֹת) can no longer become chametz when mixed with water. We may not rely on this leniency practically, lest the kernels are not fully roasted, but the fact remains.

What problem does this present? To the contrary, shouldn't removing the possibility of becoming chametz be an advantage, not a detriment, when making matzah?

Understanding this takes us back to the scriptural source in the Gemara (*Pesachim* 35a) for how we know that only the Five Grains are eligible for matzah, to the exclusion of any others. The Gemara presents a *hekeish*, a juxtaposition, between two parts of a *passuk*:

לֹא־תֹאכַל עִלְיוֹ תֶמֶץ, שִׁבְעַת יָמִים תֹּאכַל־עִלְיוֹ מִצֹּת לֶחֶם עֲנִי וְגו' (פרשת ראה טז:ג)
Do not eat with it chametz; for seven days you shall eat with it matzah,
etc.

This establishes a relationship between chametz and matzah, which is formulated as:

דְּבָרִים הַבָּאִים לַיָּדֵי חַיִּמוּץ אֲדָם יוֹצֵא בְּהֶן יְדֵי חוֹבְתוֹ בְּמַצָּה, יִצְאוּ אֵלָיו וְשֵׂאִין בָּאֵין לַיָּדֵי
חַיִּמוּץ, אֶלָּא לַיָּדֵי סִרְחוֹן

Items which become chametz (i.e. the Five Grains, when dough is left to rise) one may use to fulfill his obligation of matzah, excluding these (other grains) that cannot become chametz, only sirchon (spoilage) [and are thereby ineligible for matzah].

The precise meaning of this requirement of “items which become chametz” is a matter of dispute among the major Rishonim.

Rambam (*Chametz U'Matzah* 6:5) writes that matzah kneaded from a mixture of flour and fruit juice (מי פירות) is eligible for the mitzvah²¹. Earlier (5:2), Rambam records that dough kneaded with fruit juice and no water whatsoever cannot become chametz.²²

Combining these two rulings together, Rambam’s position emerges that the requirement to use “items which become chametz” for matzah production does not mean that this specific batch of dough must have the potential to become chametz were it left to rise. If so, he would not allow using *mei peiros* for the mitzvah since they don’t generate chametz (in his view). Rather, Chazal’s formulation expresses the uniqueness of the Five Grains. Since they alone, from all the species in the world, have the ability to become chametz when mixed with water and left to rise, only they are qualified for making matzah.

²¹ Rambam continues that fruit juices are permitted but not wine, oil, or milk. Matzah kneaded with any of those three liquids cannot be classified as *lechem oni* (לחם עוני) and is thereby invalid for the mitzvah.

²² Rabbeinu Tam concurs with the Rambam, while Rashi (*Pesachim* 35a) and Raavad (*Hasagos* 5:2) disagree. They hold that dough made with *mei peiros* will become *chometz nukshah* if left to rise. There is no *kareis* for this type of chametz, only a *תעשה* or perhaps just an *איסור דרבנן*. Rama (462:3) rules to be *machmir* for Rashi and Raavad, disallowing dough kneaded with fruit juices, except for *cholim* who may rely on the majority view.

It stands to reason, therefore, that the Rambam would allow using roasted kernels (*kilayos*) from the Five Grains to make matzah, even though mixing them with water will not produce chametz.²³

Disagreeing with the Rambam is an unnamed Rishon cited by the *Maggid Mishneh* (6:5) who holds that one does not discharge his obligation on *Leil HaSeder* by eating matzah from dough that was kneaded only with fruit juice. At least some water must be added in the mixture. *Maggid Mishnah* endorses this position as the proper halachah.

The *Maggid Mishneh*'s source is apparently the Ramban (both were Torah leaders in the Girona region of Spain, about a century apart). In *Milchemes HaShem to Pesachim* (10b, Rif) Ramban establishes: 1) the relationship between chametz and matzah determined by the *hekeish* requires that this specific dough must be an "item which can become chametz"; 2) the requirement for *shemirah* (guarding) of matzah (וְשָׁמְרָתֶם אֶת־הַמַּצּוֹת – פַּרְשַׁת) (בא יב:ז) entails watching over the dough from becoming chametz during kneading. Dough that only contains fruit juice fails these criteria because it can never become chametz.

According to Ramban, the *mitzvah* of *shemirah* mandates that one must actively arrest the fermentation process by placing the dough in the oven to bake. Since dough made with roasted kernels circumvents the possibility of chometz totally, it's ineligible for the *mitzvah* of matzah at the Seder.

Whom do *Poskim* follow? *Pri Megadim* (*Mishbetzos* 461:2) and *Shulchan Aruch HaRav* (462:1) both rule in accordance with Ramban, *lechumrah*, disallowing roasted kernels for matzah. However, *Chayei Odom* (in *Nishmas Odom, Hilchos Pesach, Sh'ailah* 15) takes a different stand. He deals with a case where wheat was harvested for matzah while the stalks were still moist.²⁴ To inhibit mold growth during storage, the stalks were

²³ This conclusion in the Rambam's *shitah* is assumed by the *Chayei Odom*, cited below. Rav Heinemann, however, asserts that even the Rambam might disallow *kilayos*. He permitted regular grains with fruit juice since they would become chometz had they been kneaded with water. However, deactivating gluten by heat changes the nature of the grain so much that even the Rambam could agree it cannot be used. See the discussion about deglutinized wheat below.

²⁴ Great care is taken when harvesting wheat for matzah that the kernels should not be moist. Harvesting takes place in the afternoon after all dew has evaporated.

dried in an oven – like *kilayos*. Are these kernels still fit for matzah? After a lengthy and exhaustive review of all the sources, he concludes that the Rambam's lenient opinion can be relied upon *bsha'as hadchak*, when there is no other alternative.

As with the question of absobed *mei peiros*, can this ruling of the *Chayei Odom*, issued for a fluke, unanticipated case, provide basis for an ongoing system that uses heated oat groats for baking matzah? Perhaps we must take the Ramban into account? Or does providing matzah to celiac sufferers qualify as a continual *sha'as hadchak*?

Outcomes for Oat Matzah

From the above discussion we see that the unique challenges of oat matzah production are categorized into two types of difficulties (in addition to those typically encountered with regular wheat matzah production): one, a possible increase in the likelihood of chametz; two, producing matzah suitable for fulfilling the mitzvah at the Seder. As can be expected, various *Poskim* adopted different postures in their halachic judgements.

Shevet HaLevi's response to Rav Westheim was that the *Chayei Odom's* leniency to rely on the Rambam applies here and heated groats may be used to fulfill the mitzvah. This is especially so since it's not certain that these enzyme-deactivated groats truly attain the status of *kilayos*. To minimize the *chashash* of chametz, he concurred with a recommendation by Rav Westheim and other English Rabbonim to limit batch sizes and hasten production so that dough will reach the oven more quickly than in traditional wheat matzah production. However, because of lingering halachic doubts in this uncharted enterprise, he ruled that someone using oat matzah for the mitzvah should not make his own *brachah*. Instead, he should listen to *brachah* of *al achilas matzah* made by someone on standard matzah and be *yotzei* through *shomei'ah k'oneh*.

Rav Sternbuch (*Teshuvos v'Hanhagos* V:130) does not express any such hesitation about one making their own *brachah* on the mitzvah at the Seder. He is more concerned about the possible chametz issue. Therefore, he recommends that oat matzah kneaded with water should be reserved for

A sample is tested (by taste and in the lab) to confirm that moisture content is approximately 14% or below.

the obligatory mitzvah. During the rest of Pesach, oat matzos kneaded with 100% fruit juice and no water should be consumed. Packaging should display a prominent mark that these matzos are exclusively for *cholim*.

Rav Elayshiv is quoted as allowing celiac sufferers to eat regular oat matzah made with water for the entire Yom Tov. However, for the Seder, they should make an effort to eat a *kezayis* of wheat matzah, if possible (*Mishnah Berurah*, *Dirshu* ed., *siman* 453, note 3).

Deglutenized Wheat

Regular wheat bread typically has a gluten level of 75,000 ppm (parts per million). American labeling laws allow products with a gluten level below 20 ppm to be advertised as gluten-free. Just as a *hechsher* attests to a product's kosher status, there are certifications that verify a product's gluten-free status.

Currently, there is active scientific research to develop a genetically modified wheat plant with very low gluten (gliadin) content, below the threshold where it would have a deleterious effect on people with celiac disease.²⁵ Previously, Italian researchers worked on reducing the gluten content in wheat through a form of hydrolysis (which breaks compounds into its component parts) using lacto-fermentation with specific lacto-bacilli and fungi.²⁶

Possibly, even the Rambam, who allows using dough mixed with fruit juice for the mitzvah even though that dough will never become chametz, would agree that deglutenized wheat is invalid for the mitzvah. A basic characteristic of wheat, as defined by Chazal, is its ability to ferment and become chametz. Removing gluten could effectively render the resultant wheat a sort of different species, no longer one of the Five Grains.²⁷ Both

²⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6470674/>

²⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1932817/>, and <https://www.sciencedaily.com/releases/2011/01/110119120406.htm>

²⁷ See above, note #23, that Rav Heinemann holds roasted and deglutenized kernels are the same in this regard. Although see *Tosafos*, *Yevamos* 44a, ד"ה כל שאינו, for differentiation between intrinsic status and an impediment.

Rav Wosner and Rav Elyashiv are reported as saying that matzah made with deglutenized wheat should not be used for the mitzvah.²⁸

In recent years, food items made with gluten-free wheat starch have become available. This starch is derived through a simple process of washing out the water-soluble starch from wheat dough or processed endosperm and then evaporating the water until a fine powdery starch is left. Because the gluten proteins have been removed (the result contains less than 5 ppm gluten), wheat starch does not lend any elasticity to dough and is primarily used as a thickener.²⁹ Despite the presence of a wheat component, the *brachah* on products made with this starch is *shehakol* and cannot be used as an ingredient in matzah.³⁰

Improvements and Developments

Over the past forty years oat matzah bakeries have continually improved and developed their production methods. Consequently, it is feasible that circumstances have changed sufficiently so that the *piskei halachah* quoted above may not apply to the products commonly used today.

One change took place in advance of Pesach 5773, when it was reported that the temperature and duration for heating groats used in Kestenbaum matzos was reduced from 350°F for 35 minutes – which generated the question of *kilayos* – to 270°F for 11 minutes. Moreover, dough that was subsequently made from these oats was allegedly tested and found that when left unbaked it fermented and became chametz. Based on this information, Rav Heinemann withdrew his primary objection to using these matzos for the mitzvah at the Seder (for people with no other option).

A far more significant change has taken place in recent years³¹. Oat matzah bakeries no longer heat the groats prior to milling, thus solving the problem

²⁸ See sources in *Piskei Teshuvos*, siman 453 note 8, and *Dirshu Mishnah Berurah*, siman 453 note 5, also *Ashrei Ho'Ish*, *Hilchos Pesach*. The effect this advancement would have on all the halachos outlined above in note #1 requires further exploration.

²⁹ <https://www.schaer.com/en-us/a/gluten-free-wheat-starch>

³⁰ See *sefer V'Zos HaBrachah* (22:4). Usually, wheat starch is לטעם and not לדבק. When it's the primary ingredient עוד צל"ע.

³¹ Material contained from here until the end of this section is gleaned from communications (email and phone) with senior management at Lakewood

of *kilayos*. Instead, they endeavor to mitigate the bitter taste by baking the oat flour into matzah soon after milling. The (broader) food industry considers the impact of the enzymatic reaction to be minimal within the first seven days. Most bakeries can accomplish this time frame, particularly for their hand matzah product.³²

Despite this effort, consumers still detect some bitterness in oat matzos not found in regular matzos. The degree of adverse taste depends on a few factors, including the growing conditions³³, how long after milling the matzos were baked, how long the matzos were exposed to air after being removed from sealed plastic packaging, and the sensitivity of a person's taste buds.

Like with wheat, the milling of oats is carefully controlled to prevent any heat build-up caused by grinding friction which would expedite chametz formation. But unlike wheat, oats have significantly higher fat content and produce an oily residue during grinding which impedes producing clean, workable flour. Out of necessity, matzah bakeries have innovated proprietary systems designed specifically for grinding oat matzah flour.³⁴

Now that the issue of eligibility for the mitzvah at the Seder has been resolved, the issue of chametz is left to be addressed. We saw that some *Poskim* felt that oats are similar to barley and the time allowance for dough to remain prior to baking should thereby be reduced from what is accepted for regular wheat dough ("18 minutes"). On a practical level, contemporary bakeries do not heed this concern. An argument to the contrary is advanced: considering that the chametz process is a function of

Matzah Bakery and Tiv Hashibolet in Eretz Yisroel. Their passion to help all segments of Klal Yisroel fulfill the mitzvah is apparent, far surpassing business considerations. Any misrepresentation of facts is solely the shortcoming of the author. I am very grateful to Rabbi Yosef Moshe Naiman for connecting me with Rabbi Yehoshua Perlman of Tiv Hashibolet.

³² For machine matzah production this time frame is harder to control if the bakery does not have its own manufacturing equipment and ships their oat flour to an outside facility.

³³ This article does not address the complications faced by matzah bakeries in sourcing gluten-free oat fields, which impacts the final product.

³⁴ On the subject of using machines for milling matzah flour, see *Kovetz Halachos (Piskei Rav Shmuel Kamenetsky)* who explains why it has the exact same level of *hiddur* as flour made in a hand (or bicycle) grinder.

the gluten component in dough, leads one to conclude that oats, which don't contain gluten, should take longer than wheat to become chametz. Empirical observation seems to support this notion.³⁵

Concern about the thickness of oat matzos is dealt with differently by various bakeries. Lacking gluten, oat flour dough crumbles easily and is difficult to handle. Efficiencies designed for producing thin wheat matzos don't work for oat matzos. Regular handmade wheat matzah has up to six people working the dough to make a matzah as thin as possible without ripping before it reaches the oven.³⁶ Oat dough is very fragile and cannot withstand the intensity of this process. For oat matzah, often just a single person handles the dough all the way through. Even with this delicate touch, significant amounts of oat dough break apart during rolling and large quantities are discarded at the end of each production run. To keep the operation viable and meet production demands, many bakeries must roll their oat dough thicker than wheat.

Tiv Hashibolet takes a different route because they state as their goal to produce oat matzah that resembles wheat matzah as much as possible. They do not want anyone sitting at a Seder – particularly children - to feel they are using an 'inferior' product because of their health restrictions. For that aim they are willing to accept considerable product inefficiency.

For example, they strive for maximum tastiness by sifting the oat flour many times over, much more than is necessary, until they achieve a 'clean' result. The repercussion of this added step can be a 50% loss from the

³⁵ Taking this logic further, an argument has been made that since the prevalent varieties of wheat available today have been genetically modified and contain much higher levels of gluten than natural wheat (currently only sold in specialty markets as "heritage" and "heirloom" varieties), the classic *shiur* of "18 minutes" which was based on natural wheat, should be reduced. Rav Heinemann rejects this notion. He points out that increased gluten only serves to form a stronger web trapping more of the fermentation gasses. It makes the leavening more noticeable but does not hasten the formation of chametz itself. (It should be noted that some claim the heightened gluten sensitivity detected among the population in recent decades stems from the widespread use of GMO wheat.)

³⁶ Stations in a typical commercial hand-matzah bakery, after initial mixing of water and flour are: kneader, '*finner*', slicer, roller, '*gomeir*', transfer by pole, '*reddler*', transfer by pole, baker.

starting stock.³⁷ Achieving comparable thinness also adds additional impediments into an already arduous process. Starting off with a very wet dough helps keep the brittle mixture somewhat pliable for rolling, with much of that moisture getting absorbed into the paper which covers the wooden tables and poles³⁸ (for traditional reasons, they don't use metal). The thinness further increases the yield loss which they accept as a trade-off in their quest for oat matzos on par with wheat matzos.

Even Tiv Hashibolet has not succeeded in making oat matzos the same size (diameter) as regular wheat matzos. Their attempt at making large, thin oat matzos resulted in numerous broken matzos with a very small number of *shleimos* usable for *lechem mishneh*.

Commercial manufacturing always presents a tension between quality and volume, and matzah bakeries are no different. On one hand, they want to maintain the highest standards of kashrus, but on the other hand they must meet the quantities demanded by their customers. This struggle is more acute with oat matzos, which can cost triple the amount of their wheat counterpart.³⁹ There is a risk that uninformed consumers who seek gluten-free matzos may be drawn to lower cost “matzah-like” products on the market that are made with potato starch and have no connection to the mitzvah. (Manufacturers have improved their labeling of such products.)

Tiv Hashibolet addresses this by offering two tiers of product. The vaunted *Badatz Eidah HaCharedis* approves their “*Chaburah* 18 minute” oat

³⁷ Tiv Hashibolet says it takes them up to four days of baking to produce what other bakeries produce in just one day!

³⁸ In the beginning, oat matzos were not folded over on a stick to be inserted in the oven like ordinary wheat matzos since they would break apart. Instead, they were placed on a sheet and maneuvered onto the oven floor. Today, oat matzos are folded on a stick, with the expectation that many will crumble and fall to the floor before reaching the oven (something which does not happen with wheat matzos). Once left to bake in the oven they stay together well enough to be flipped.

³⁹ The high cost is understandable given the difficulty in producing oat matzos and the attendant yield losses. In addition, unpredictable factors such as weather – temperature and humidity – play a role in whether a day's oat matzah production will be successful or a loss. While atmospheric conditions are a factor in any baking operations, it usually affects the ingredient proportions. With oat matzah, the wrong weather, on rare occasion, can make baking impossible for the day.

matzah productions. While the *Badatz* hesitates to authorize use of their widely recognized flowery symbol on oat matzah packaging – in deference to the *Minchas Yitzchak*, their past leader, who did not sanction them – their name appears in print along with a prominent disclaimer that the product is not for general use, only for people sensitive to gluten. Tiv Hashibolet additionally produces a less costly variety bearing the *hechsher* of *Rabanut Yerushalayim Mehadrin*, also with a disclaimer. This product is made with the same attention and care, but the production goes a few minutes longer between total clean-outs.⁴⁰



Chometz vs. Matzah and Subjugating the Existential Enemy

This fundamental dispute between Rambam and Ramban about the relationship between chametz and matzah provides a portal into the message of the mitzvah.

Radbaz (prolific leader of 16th century Egyptian Jewry) in a *teshuvah* (977) investigates the Torah's seeming hyper-sensitivity toward chametz on Pesach. Not only does eating chametz incur a harsh punishment, *kareis*, the prohibition carries other exceptional stringencies, on both the Torah and Rabbinic levels. Namely, the injunction against chametz includes both eating and deriving benefit; even a speck of chametz that becomes mixed with food on Pesach prohibits the mixture as chametz is not nullified (אָסוּר בְּמִשְׁעוּהוּ); the obligation to search for chametz and rid it from one's possession goes well beyond any other *issurim* – even for *avodah zarah* this isn't required!

Radbaz concludes from these halachos that while all mitzvos convey an underlying lesson and message, when it comes to chametz on Pesach the straightforward *peshat* is its symbolism. Chazal teach that chametz represents the *Yetzer HoRa*⁴¹, the insidious inclination that infiltrates our

⁴⁰ Machine matzos from Eretz Yisroel not marked “*Chaburah*” (even when *shemurah*) often utilize the 22.5-minute definition of a *mil*. See Rabbi Tzvi Rosen's article, *Machine Matzos: Timing is Everything!*, in *Kashrus Kurrents*, Spring 2009, www.star-k.org/articles/articles/seasonal/342/machine-matzos/

⁴¹ זוה"ק (ח"א רכו:)- נְאֻקְרוֹן חֲמֵץ, יִצָּר הָרַע; רבינו בחיי (פרשת ויקרא ב:י) - והשאור והדבש הן ע"ע הן יצר הרע עצמו, כמו שאמרו רז"ל לענין חמץ ומצה בפסח צריך אדם לפנות לבבו מיצר הרע; ע"ע רמ"א בס' תורת העולה

consciousness and lures us to pursue a spiritually harmful path. Just as a bit of sourdough starter (שֵׁאֹר שְׂבֻעֵי סָהָה – *Berachos* 17a) is all it takes to catalyze a modest combination of flour and water causing it to expand and rise beyond proportion, or one minuscule cell can metastasize, רַחֲמֵינָא לְיָלֵן, into a devastating force, so too once the *Yetzer HoRa* gains a foothold, no matter how small, it can grow, at first slowly then rapidly, and eventually overwhelm our moral sense and judgement. One must eradicate the *Yetzer HoRa* and eliminate its influence, bursting the overblown fantasies it projects, to gain the clarity needed for succeeding in his life mission.

All year we contend with the *Yetzer HoRa*. A perpetual tug-of-war, it pulls us downwards as we strive to ascend higher, or at least maintain traction. On Pesach, the holiday of freedom, in our quest to break free and soar to attain the lofty spiritual heights afforded by the Yom Tov, we are enjoined to rid ourselves from the representation of the *Yetzer HoRa*.

Matzah, the antipode of chametz, symbolizes redemption from the shackles of body and mind. The *hekeish* between matzah and chametz shows they are not disparate entities. Rather, one is an outgrowth of the other. Matzah is a product that results from the abnegation of chametz.

The Rambam's approach is that matzah is produced from grain that could conceivably become chametz. It's not necessary for this specific dough to have the ability to reach that point. This demonstrates that vanquishing the *Yetzer HoRa* does not require head-on confrontation. Success is achievable by recognizing the existence of evil and acknowledging its latent destructive forces, and then choosing a path that circumvents danger.

This course reflects the task with which *Odom HaRishon* was initially charged. Midrash *Koheles Rabbah* (7:13)⁴² describes how *HaKadosh Baruch Hu* placed him in Gan Eden and took him around to every tree in the Garden saying, "See my handiwork, how beautiful and praiseworthy it is. All that I created is for your benefit. Take care not to ruin it and destroy my world, etc."

Odom understood the ruination and destruction that could be wrought by following the *Yetzer HoRa*. Choosing to engage only with good would have been an accomplishment worthy of ushering in the epoch of eternal

⁴² Cited in *Mesilas Yeshorim*, chap. 1

geulah. Just like grain is eligible for matzah through its potential for becoming chametz, similarly, man's redemption is possible through his potential to encounter evil, with no need for direct engagement.

The Ramban has a different conception. He requires actively suppressing the formation of chametz in order to produce matzah. Overcoming the *Yetzer HoRa* involves confronting it directly. In this realm, one must struggle to remain in control without succumbing to its alluring temptations. Constant *shemirah* is required to stay on guard and not be left vulnerable. *Geulah* arrives when the evil force is neutralized.

Such is the pathway introduced after *Odom* and *Chavah* partook from the *Eitz HaDaas* and the serpent injected its venom into mankind⁴³. The battle ground shifted from evil lurking along the periphery, which can be avoided, and became an internal clash where the *Yetzer HoRa* is invariably engaged. Hashem told Kayin:

הָלוֹא אִם־תִּיטֵיב שְׂאֵת וְאִם לֹא תִיטֵיב לְפָתַח חַטָּאת רֹבֵץ וְאֶלֶיךָ תִּשְׁוֹקוּ וְאַתָּה תִּמְשָׁל־בּו
(בראשית ד:ז) ... *if you do not improve, sin crouches at the door; Its urge is directed toward you, yet you can master it.*

The allure of *cheit* is ever-present; either we control it, or it controls us.

Gemara (*Sukkah* 52) describes how in the future, when Hashem will slaughter the *Yetzer HoRa*, both Tzadikim and Reshoim will cry. Tzadikim will be overwhelmed as it will appear they resisted a force as formidable as a mountain, while Reshoim will feel deep sorrow for failing to resist a force no stronger than a strand of hair. The *Bais HaLevi* (*Parshas Bereishis*) asks, which depiction is correct? Is the *Yetzer Hora* powerful like a mountain, or weak like a piece of hair?

Adapting his explanation to our premise, the answer is that both are true. It depends on the mode of interaction. A Tzadik takes precautions, at times extreme, to avoid direct engagement. Despite not experiencing it up close, he is fully aware of the danger and does everything in his power to steer clear of the *Yetzer HoRa*. He's not interested in becoming entangled with such a foe. In the future, when he realizes how indomitable the *Yetzer HoRa* really was, he will be astonished and wonder how he successfully

⁴³ See Gemara Shabbos 146a; *Beis HaLevi, Parshas Bereishis*, ד"ה הן האדם

avoided an encounter with that looming mountain that dominates the landscape.

In contrast, a Rosho is not willing to take any evasive measures. Besides not wanting to be bothered by inconvenience or hardship, he enjoys the pleasure of dabbling in the illicit, temporal pleasures offered. He too knows there are red lines that should not be crossed, but his overblown confidence deludes him into thinking he can pull away at any time. After getting too close to the edge he allows himself to fall off. Each time the cliff gets higher; eventually he falls into an interminable abyss. In the future, when he confronts the reality of a fatal spiritual injury, he will be dismayed to see how easy it would have been to take a step back and remain on firm footing. As simple as controlling a strand of hair. But at the time, in the heat of the moment that he allowed himself to enter, he wasn't interested.

Most people are a complex admixture of conflicting views and experiences, all at the same time. A *cheit* such as eating *treif* food, for example, can remain in the realm of potential for one's entire life no matter how hungry he gets, while confronting the spiritual pitfalls of other sorts of pernicious activities, subtle or otherwise, can present a real and prolonged struggle.

Mishlei teaches (20:18): *מִקְשׁוּבוֹת בְּעֵצָה תִּכּוֹן וּבְתַחֲבִילוֹת עֲשֵׂה מְלֻחָמָה*
Plans with proper advisement will be firm; and with strategies wage war.

The Vilna Gaon explains the second part of this *passuk* as referring to the war with the *Yetzer HoRa*. Seeking advice from others is helpful, perhaps essential, but is not enough. Success in battle comes from formulating strategies and approaches by the only one who really understands the theater of operations – the person himself. Sometimes he'll need evasive techniques, other times the courage to fight. With persistence, the list of attractions requiring direct attack will wane and merely eluding them will be sufficient.

The redemptive power of matzah is accessed by ingesting an item which was produced by conquering the representation of evil, either through avoidance, subjugation, or both. While the emphasis, as with any mitzvah, is to fulfill the command of Hashem, it also enables us to regain focus on our essential mission and catapults us to a realm reminiscent of the pristine Garden from which we emerged and toward which we are destined.